

# FIXED PLANT

## WEAR SOLUTIONS

Our Innovation. Your Advantage.





# Overview

Bradken aims to supply technically advanced wear solutions to the global market.

Our Fixed Plant specialists are focused on developing products and services to meet customer aspirations. We provide a range of engineering services and have sufficient capabilities to develop and manufacture a solution for any project. Our vast product range is continuously expanding to provide total wear solutions.



Our products include:

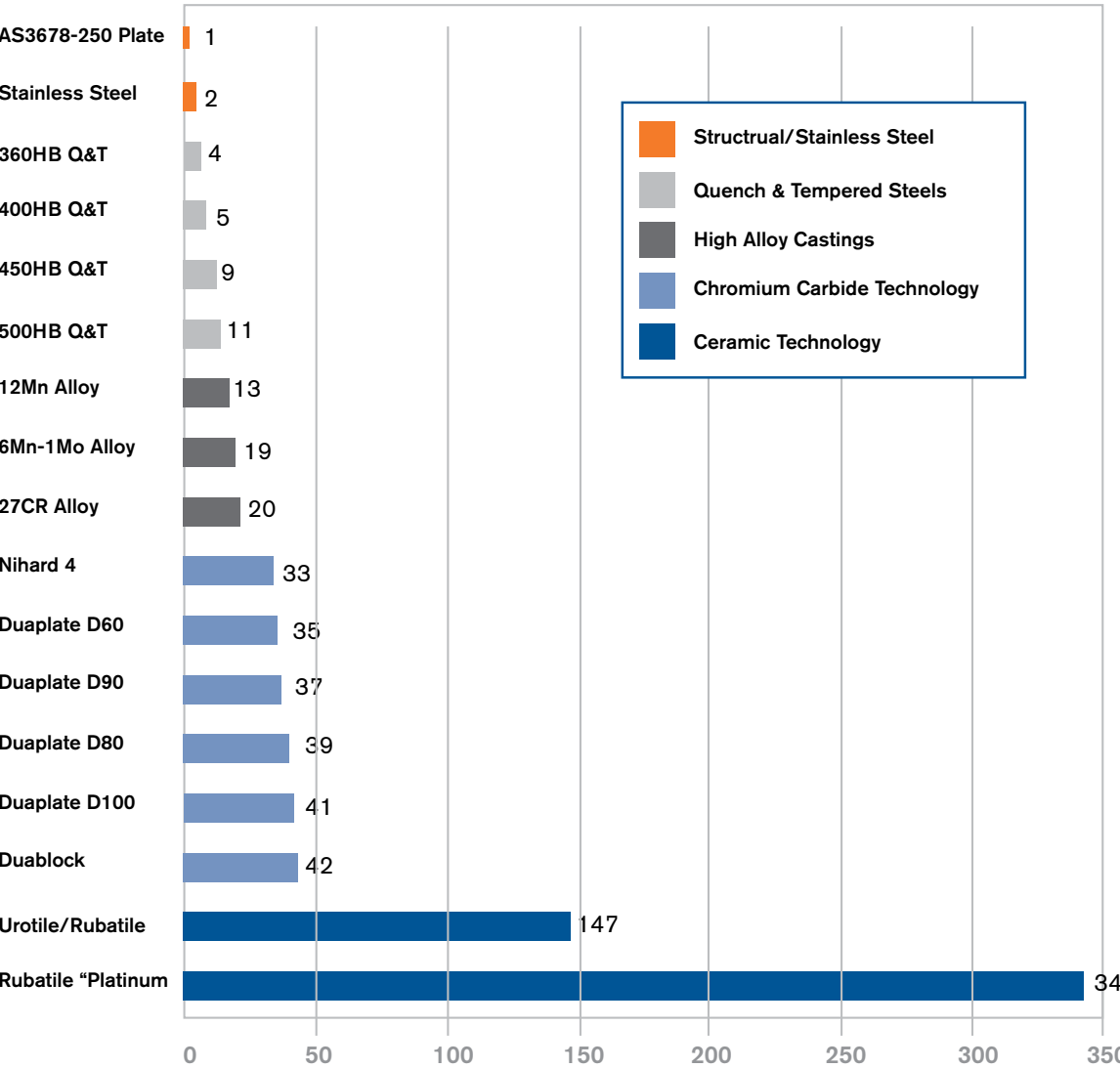
- Rubatile®-** Rubatile combines hard abrasion resistant alumina tiles with an impact resistant and abrasion resistant rubber. Rubatile ceramic liners are designed for use in moderate impact applications and severely abrasive environments found in the mining and mineral processing industries.
- Urotile®-** Urotile combines hard abrasion resistant alumina ceramic tiles with an impact resistant polyurethane elastomer. Urotile is used in the most extreme abrasive environments found in the mineral processing industry.
- Duablock®-** Range of products based on a composite white iron wear surface metallurgically bonded to a weldable mild steel backing plate. Duablock is fixed to the surface of fixed and mobile plant equipment, such as mining buckets and chutes, where protection from severe abrasion is required.
- Duaplate®-** With over 40 years' experience in the manufacture of chromium carbide clad wear plate Bradken is a global market leader in this field. With a selection of different grades, thicknesses and sheet sizes to best fit a solution for high impact or sliding abrasion in fixed or mobile equipment applications found in the mining and resource industry.
- Nihard -** Abrasion and high impact resistant product. Nihard is a white iron, alloyed with chromium and nickel, to provide a tough wear resistant material. Nihard is often cast into billets and liners and used extensively in the mining, and mineral processing industries, particularly in bulk handling situations.
- Q&T Steel -** Quench and tempered wear resistant steel plate provides an economical solution to an abrasive and impact prone environment. Bradken's Q&T Steel is easily fabricated and has many applications in the construction, mining and mineral processing industries.
- Epoxies -** A complementary product which we recommend to be used to take up gaps between liners thus helping eliminate any premature wear. We offer different grades for different applications so whether it's for a small gap or an ad-hock fast cure fix in a high wear area we will have the right product for you. Each grade of epoxy comes with a variety of ceramic particles giving exceptional wear characteristics.

# Wear Life Expectations Hierarchy of Sliding Abrasion Resistance

Bradken has always been considered at the forefront of supplying quality, abrasion resistant products to the market place. Bradken has strived to improve existing technologies and develop new products to provide maximum protection for fixed plant and mobile equipment against the effects of wear. Our research and development has led to Bradken providing a range of products from quench and tempered steel, chromium carbide or ceramic based products. Thus providing the best suited material for the environment that it has to perform within.

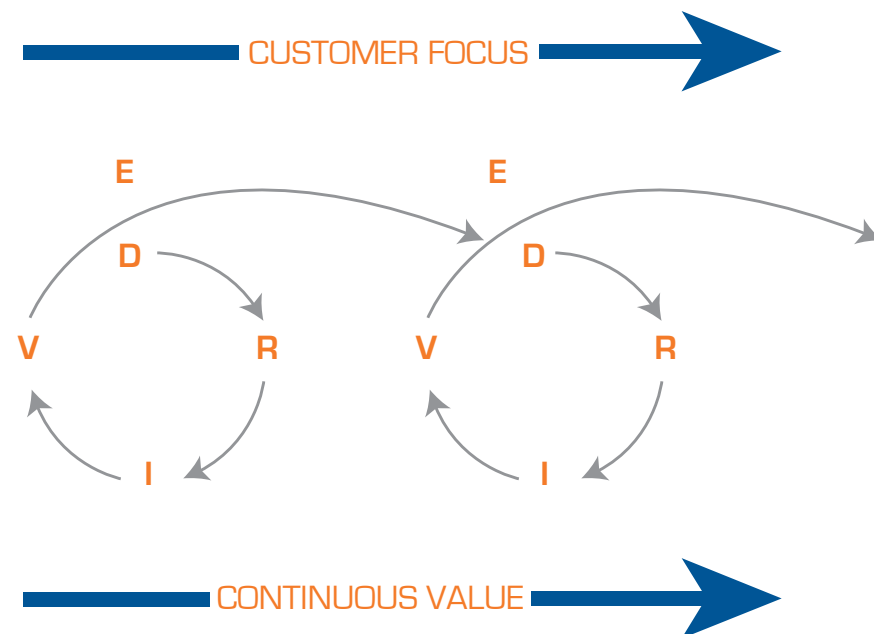
The graph below represents a comparison of common wear resistant materials to AS3678-250 mild steel. The materials have been independently tested under the ASTM G65-04 dry sand rubber wheel test standard for low stress sliding abrasion.

The number next to each product represents the factor by which the product will outlast AS3678-250 mild steel. For example, Duablock will last 42 times longer than mild steel in a similar low stress abrasion situation. The graph is only intended as a guide and does not incorporate design advantages such as rock boxes, which can greatly enhance product wear life.



# DRIVE - Wear Management Solution

Bradken delivers immediate benefits to customers through its wear management solutions. **DRIVE** has been developed to deliver continuous value through customer focus.



<b>D</b> iscover	- the customers' needs and current performance
<b>R</b> eview	- all available information and propose a solution
<b>I</b> mplement	- the proposed solution
<b>V</b> erify	- how the solution performs and identify improvement opportunities
<b>E</b> ngineer	- improved wear solutions

## Benefits of DRIVE:

- Increased Safety through reduced unscheduled maintenance
- Process Improvement through increased tonnage throughput and reduced maintenance costs
- Improved Value through optimised solutions and improved wear life
- Fully Traceable Condition Monitoring
- Total Wear Solutions
- Optimised Stock Management

# SmartLiner

The Bradken **SmartLiner** system was developed to remotely monitor wear. The **SmartLiner** system consists of sensors embedded in the wear liners. A wear monitoring cabinet periodically measures the sensors. This data is stored to a data card and displayed on the cabinet screen. This data can also be accessed online. Users can subscribe to periodic reports as well as email alerts.

The **SmartLiner** offers a number of benefits to customers in the mining and resources industry in any application where liner thickness monitoring is necessary but difficult.

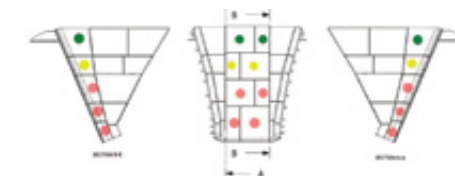
The system offers: 32 sensors per controller, data logging, 12.1" touch panel, 3G internet connection, wear mapping, wear rates, life predictions, email alerts, automated reporting, shut planning and email report subscriptions.



## Improved Safety



Liner inspections no longer need to be conducted in potentially unsafe environments like confined spaces inside chutes and hoppers. The inspector can simply check the data from the control unit display or online.



Sensor ID	Sensor Name	Signal	Max	Min	Status
1	Sensor 1	100	100	0	Red
2	Sensor 2	50	100	0	Yellow
3	Sensor 3	25	100	0	Green
4	Sensor 4	10	100	0	Green
5	Sensor 5	5	100	0	Green
6	Sensor 6	2	100	0	Green
7	Sensor 7	1	100	0	Green

## Improved Efficiency



Some applications, in particular large hoppers, require 80 plus hours to bulldoze the stock pile in order to view the hopper and liners. The **SmartLiner** insitu monitoring system allows operators to get accurate "live" thickness data while the hopper is working therefore minimising production downtime.



## Reduced Maintenance Costs



The availability of live thickness data allows for liner change-outs to be optimised resulting in reduced maintenance costs and increased production. Wear life predictions and email alerts improve shut planning and reduce the likelihood of unplanned maintenance.





ENHANCED FLOW  
SUPERIOR MATERIAL  
ABRASIVE RESISTANT  
PREMIUM  
QUALITY  
FOUR DIFFERENT GRADES  
HIGH IMPACT  
STRENGTH  
CHROMIUM CARBIDE SOLUTION  
FABRICATION  
DUAPLATE



## The Chromium Carbide Solution

Duaplate is a well established chromium carbide overlay plate, well known for its high abrasion and impact resistance. Duaplate is chromium carbide composite cladding that is fusion bonded to a backing material. Duaplate is renowned for being one of the most abrasive resistant surfaces available.

Duaplate is available in four different grades to suit a range of operating conditions:

- D60** - Suited for applications involving high abrasion and medium impact.
- D80** - Suited for applications involving high abrasion and high impact.
- D90** - Suited for applications involving severe sliding abrasion or fine particle abrasion with low impact.
- D100** - Suited for applications requiring severe abrasion resistance at elevated temperatures up to 800oC.

**Duaplate Polished** - is available in all grades and thicknesses, the “Polished” surface finish will enhance flow characteristics of sticky ore.

The standard backing material for Duaplate is mild steel. The backing plate acts as a ductile base, which allows Duaplate to be formed and shaped without damage to the overlay material. The backing plate can also be used for structural support, allowing entire hoppers and chutes to be created using only Duaplate.

Duaplate has been proven to outlast quench and tempered steel in high abrasion and impact applications.

Duaplate Grade	Wear Life Relative to 400HB Q&T Steel
Duaplate D60	5.8
Duaplate D80	6.5

Duaplate is a premium quality product. It is manufactured under tightly controlled parameters within a quality management system. Bradken has always been considered at the forefront of supplying quality, abrasion resistant products to the market place.



## Duaplate D60

The D60 overlay material is an austenitic chromium carbide iron that is based on AS2576-2355. The microstructure consists of primary M7C3 carbides in a carbide austenite eutectic matrix. The high abrasion resistance is provided by the hard chromium carbides that protect the matrix from abrasive wear.

**Duaplate D60 is suited for applications involving high abrasion and medium impact.**



### Typical uses include:

- Grizzly bars
- Crusher main frame liners
- Chute liners
- Bin and hopper liners
- Slurry pipes and bends
- Sugar harvesting equipment

## Duaplate D80

The D80 overlay material is a complex chromium carbide iron that is based on AS2576-2455. The microstructure of this material consists of primary M7C3 carbides in a complex carbide austenite matrix. The toughness of the material is improved by the formation of nodular complex carbides leading to a reduction in the size of acicular M7C3 type carbides and inter-carbide spacing.

**Duaplate D80 is suited for applications involving high abrasion and high impact.**



### Typical uses include:

- Sizing Screens
- Deflector Plates
- Chute liners
- Bin & hopper liners
- Screw Feeders

## Duaplate D90

The D90 overlay material is a martensitic chromium carbide iron that is based on AS2576-2560. The microstructure of this material consists of primary M7C3 carbides in a carbide martensite eutectic matrix. The material is resistant to fine particle abrasion due to the improved hardness of the matrix.

**Duaplate D90 is suited for severe sliding abrasion or fine particle abrasion with low impact.**



### Typical uses include:

- Cement chutes
- Cyclones
- Fan blades
- Fan casings
- Agricultural implements
- Trommel screen liners
- Sizing Screens

## Duaplate D100

The D100 overlay materials are complex chromium carbide irons that are based on AS2576-2460. The microstructure of these materials consists of primary M7C3 and MC carbides in a complex carbide austenite matrix. The high temperature abrasion resistance performance is attributable to the presence of refractory elements molybdenum, niobium and tungsten. D100-XP contains a higher amount of refractory elements than D100, which results in a greater resistance to abrasion at high temperatures.

**Duaplate D100 is suited for applications requiring severe abrasion resistance at elevated temperatures.**



### Typical uses include:

- Sizing screens
- Ducts
- Sinter bins
- Chute liners

## Working with Duaplate

### Forming and Fabrication

The steel backing plate provides Duaplate with structural integrity, thus entire structures can be fabricated from Duaplate, enabling a continuous wear-resistant surface to be produced regardless of the shape and complexity of the fabrication. Bradken has the capabilities to manufacture such structures or to supply cut and formed, ready-to-go wear liners.

### Welding

The base material can be welded with standard mild steel or low hydrogen welding consumables with no pre-heating required. However, care should be taken to avoid contacting the overlay material.

### Cutting

Plasma cutting is the recommended method for cutting Duaplate. It is preferable to cut Duaplate from the backing plate side to ensure a clean edge and to prevent carbide contamination.

### Attachment Methods

- Duaplate can be fabricated with studs welded to mild steel side of wear plate (M12, M16, M20 and M24)
- Duaplate can be fabricated with countersunk holes to suit bolts (M12, M16, M20 and M24)
- Duaplate can be supplied with holes ready cut for plug welding

Plate Type	Nominal Wear Thickness (mm)	Nominal Backing Thickness (mm)	Estimated Mass (kg/m <sup>2</sup> )	Sheet Size (mm)		
				2667 X 1125 2667 X 1092	1940 X 2870 2360 X 2870 3600 X 2870	1613 X 3100 3100 X 2000
6 on 4	6	4	79	"D60, D80 2667x1125"		"D60, D80 3100x2000"
6 on 6	6	6	94			
6 on 8	6	8	110			
6 on 10	6	10	126			
6 on 12	6	12	141			
9 on 8	9	8	133	"D60, D80 2667x1092"	D60, D80	"D60, D80 1613x3100 3100x2000"
9 on 10	9	10	149			
9 on 12	9	12	165			
12 on 8	12	8	157			
12 on 10	12	10	173			
12 on 12	12	12	188			
17 on 10	17	10	212			
17 on 12	17	12	228			
20 on 10	20	10	236			
20 on 12	20	12	251			
25 on 10	25	10	275			

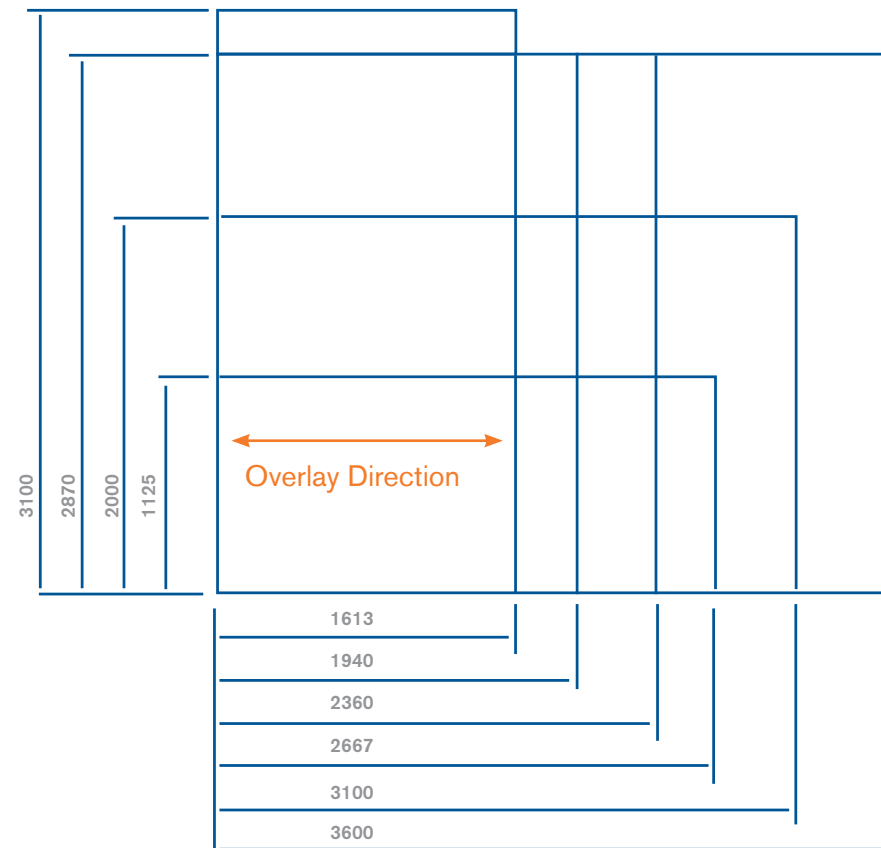
#### Notes:

Please discuss any variation from standard with your local sales representative.

Non-standard sheets and plate types are made to order with a minimum quantity.

Products with a mass over **25kg** we recommend two person or mechanical lifting.

Preferred Size  
Available on Request

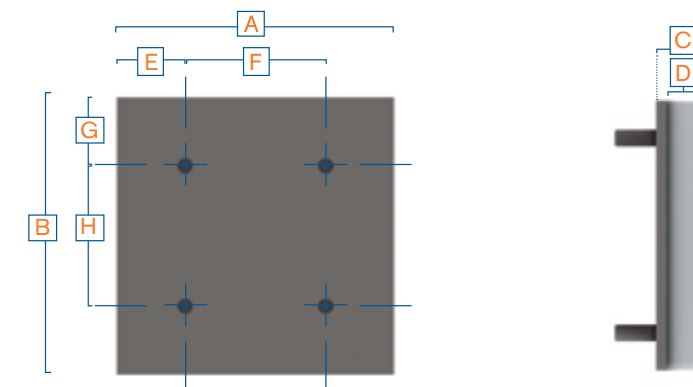


## Standard Dimensions & Weights

Standard liners are manufactured with M16x40LG studs, other stud sizes are available on request.

Products with a mass over **25kg** we recommend two person or mechanical lifting.

Part No.	Dimensions (mm)								Mass (kg)
	A	B	C	D	E	F	G	H	
SQU-001-DP25/10D80	300	300	35	25	74	152	74	152	25
RECT-0001-DP25/10D80	148	300	35	25	74	-	74	152	12
RECT-9001-DP25/10D80	452	300	35	25	74	304	74	152	37
RECT-0007-DP25/10D80	452	148	35	25	74	304	74	-	18
S-001-DP25/10D80	296	296	35	25	73	150	73	150	24
R-0001-DP25/10D80	146	296	35	25	73	-	73	150	12
R-9001-DP25/10D80	446	296	35	25	73	300	73	150	36
R-0007-DP25/10D80	446	146	35	25	73	300	73	-	18
SQU-001-DP20/12D80	300	300	32	20	74	152	74	152	23
RECT-0001-DP20/12D80	148	300	32	20	74	-	74	152	11
RECT-9001-DP20/12D80	452	300	32	20	74	304	74	152	34
RECT-0007-DP20/12D80	452	148	32	20	74	304	74	-	17
S-001-DP20/12D80	296	296	32	20	73	150	73	150	22
R-0001-DP20/12D80	146	296	32	20	73	-	73	150	11
R-9001-DP20/12D80	446	296	32	20	73	300	73	150	33
R-0007-DP20/12D80	446	146	32	20	73	300	73	-	16
SQU-001-DP17/12D80	300	300	29	17	74	152	74	152	20
RECT-0001-DP17/12D80	148	300	29	17	74	-	74	152	10
RECT-9001-DP17/12D80	452	300	29	17	74	304	74	152	31
RECT-0007-DP17/12D80	452	148	29	17	74	304	74	-	15
S-001-DP17/12D80	296	296	29	17	73	150	73	150	20
R-0001-DP17/12D80	146	296	29	17	73	-	73	150	10
R-9001-DP17/12D80	446	296	29	17	73	300	73	150	30
R-0007-DP17/12D80	446	146	29	17	73	300	73	-	15
SQU-001-DP12/12D80	300	300	24	12	74	152	74	152	17
RECT-0001-DP12/12D80	148	300	24	12	74	-	74	152	8
RECT-9001-DP12/12D80	452	300	24	12	74	304	74	152	26
RECT-0007-DP12/12D80	452	148	24	12	74	304	74	-	13
S-001-DP12/12D80	296	296	24	12	73	150	73	150	17
R-0001-DP12/12D80	146	296	24	12	73	-	73	150	8
R-9001-DP12/12D80	446	296	24	12	73	300	73	150	25
R-0007-DP12/12D80	446	146	24	12	73	300	73	-	12
SQU-001-DP09/08D80	300	300	17	9	74	152	74	152	12
RECT-0001-DP09/08D80	148	300	17	9	74	-	74	152	6
RECT-9001-DP09/08D80	452	300	17	9	74	304	74	152	18
RECT-0007-DP09/08D80	452	148	17	9	74	304	74	-	9
S-001-DP09/08D80	296	296	17	9	73	150	73	150	12
R-0001-DP09/08D80	146	296	17	9	73	-	73	150	6
R-9001-DP09/08D80	446	296	17	9	73	300	73	150	18
R-0007-DP09/08D80	446	146	17	9	73	300	73	-	9
SQU-001-DP06/08D80	300	300	14	6	74	152	74	152	10
RECT-0001-DP06/08D80	148	300	14	6	74	-	74	152	5
RECT-9001-DP06/08D80	452	300	14	6	74	304	74	152	15
RECT-0007-DP06/08D80	452	148	14	6	74	304	74	-	7
S-001-DP06/08D80	296	296	14	6	73	150	73	150	10
R-0001-DP06/08D80	146	296	14	6	73	-	73	150	5
R-9001-DP06/08D80	446	296	14	6	73	300	73	150	15
R-0007-DP06/08D80	446	146	14	6	73	300	73	-	7





FULL RANGE  
ENGINEERING SERVICES  
EXPERIENCE  
HIGH WEAR  
SUPERIOR MATERIALS  
PRODUCT MIX  
DEVELOPMENT  
HIGH IMPACT  
HIGH ABRASION  
Q&T PLATE



Bradken's **Q&T Steel** is a heat-treated, quench and tempered (Q&T) steel designed for applications where involving high impact and moderate abrasion are the primary cause of failure. Bradken's **Q&T Steel** provides an economic alternative to more exotic abrasion and impact resistant materials.

### Material Information

Bradken's **Q&T Steel** is an abrasive resistant quench and tempered steel plate. The controlled chemistry and heat treatment provide a superior microstructure for an excellent combination of toughness and wear resistance. Bradken's **Q&T Steel** is available in a variety of sizes and thicknesses to suit a range of operating conditions.

Grade	Harness HBW	Thickness (mm)	Width (mm)	Length (mm)	Typical Chemistry (%)											Mechanical Properties			Charpy Impact
					C	Si	Mn	P	S	Cr	Ni	Mo	B	CEV	CET	Yeild	Tensile	Elongation	
400	370-430	3-130	1350-3300	2000-14500	0.18	0.7	1.6	0.025	0.01	1	0.25	0.25	0.004	0.48	0.29	1000Mpa	1250Mpa	10%	45J
500	450-540	4-80	1350-3300	2000-14500	0.29	0.7	1.6	0.025	0.01	1	0.5	0.3	0.004	0.62	0.41	-	-	-	30J
600	570-640	8-50	1350-2000	2000-14500	0.45	0.7	1	0.025	0.1	1.2	2.5	0.8	0.004	0.73	0.55	-	-	-	20J

### Welding

Bradken's **Q&T Steel** can be welded in accordance with AS1554.4. It is recommended that the plate should be pre-heated for all thicknesses. No post heating is required.

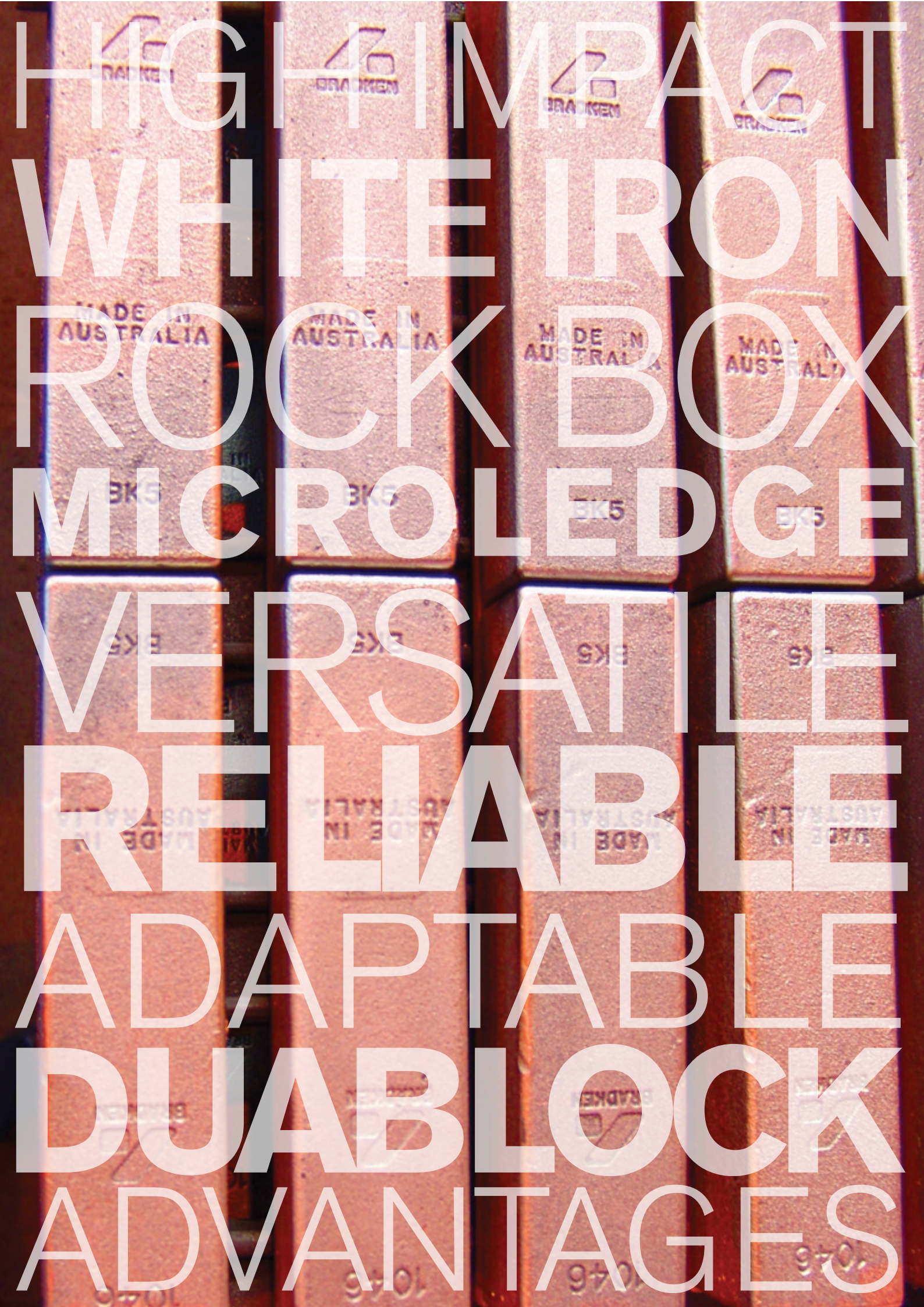


▲ Q&T Steel



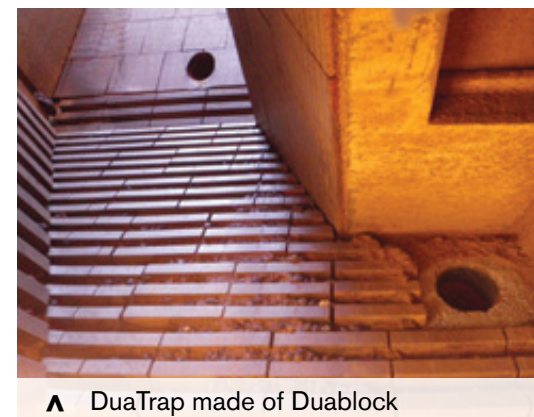
▲ Q&T Steel





Bradken is a leading manufacturer of wear resistant products for the mining, construction and mineral processing industries. With over 30 years experience, Bradken has distinguished itself as a provider of quality products that meet customer requirements.

Bradken's **Duablock** products are a composite material comprising of a chromium-molybdenum, abrasion resistant, white iron casting, metallurgically bonded to a weldable mild steel backing plate. The white iron casting is a superior wear resistant product, containing hard chromium carbides, typically 1500HV, supported in a martensitic matrix.



▲ DuaTrap made of Duablock



▲ ROM Beams lined with Duablock

The advantages of using Bradken's range of block products:

- **Longer wear life:** Bradken's block products will greatly outlast Q&T steel.
- **Reduced downtime:** Bradken's block products improve equipment life and require less maintenance and inspections.
- **Easy to fit:** No special qualifications required to weld. As an alternative to welding, studs can be attached on request.
- **Flexibility:** Bradken can supply block products for attachment in the field as required, or they can be pre-attached to equipment at one of Bradken's engineering workshops.
- **Adaptability:** Bradken's block products are available in a wide range of dimensions and can be adapted to suit a wide range of operating conditions.



Applications of Block Products

Bradken's block products can be strategically placed on equipment before it enters service to prolong life in high wear locations. They can also be welded onto equipment during service to rectify wear in unexpected, localised trouble areas.



**Duablock®** - wear bars offer excellent protection when used as tumble bars or when configured to form a rock-box. They are also used to provide protection on heavy earth moving machinery.



**Duabutton®** - blocks are extensively used on heavy earth moving equipment, particularly on mining and construction buckets and shovels.



**Chokblock®** - bars are unique block products that can be formed and welded onto flat or curved surfaces. This allows Chokblocks to be used on a range of fixed plant and mobile equipment such as buckets and chute liners.



**Microledge®** - blocks are attached to chutes to form rock boxes, which virtually eliminates wear to the chute structure.



**Skidblock®** - pads are used extensively to provide strategic protection on heavy earth moving equipment, particularly on mining and construction buckets and shovels.



**Duatrap®** - liners are used to create a rock-box effect on fixed plant applications such as chutes and impact walls.



**Grizzlybar** - cappings used to protect grizzly fingers.



**Duanut®** - blocks allow protection of nuts or bolt heads. The Duanut also offers flexible attachment options with internal and external welding possible.

Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.  
Other sizes can be made on request.  
Products with a mass over 25kg we recommend two person or mechanical lifting.

Part No.	Dimensions (mm)					Mass (kg)
	A	B	C	D	E	
BD200X25X25D70	200	25	25	15	10	1
BD300X25X25D70	300	25	25	15	10	2
BD45X50X50D70	45	50	50	40	10	1
BD75X50X50D70	75	50	50	40	10	2
BD115X50X50D70	115	50	50	40	10	2
BD120X50X50D70	120	50	50	40	10	2
BD128X50X50D70	128	50	50	40	10	3
BD150X50X50D70	150	50	50	40	10	3
BD190X50X50D70	190	50	50	40	10	4
BD210X50X50D70	210	50	50	40	10	4
BD215X50X50D70	215	50	50	40	10	4
BD230X50X50D70	230	50	50	40	10	4
BD294X50X50D70	294	50	50	40	10	6
BD300X50X50D70	300	50	50	40	10	6
BD432X50X50D70	432	50	50	40	10	9
BD100X75X75D70	100	75	75	60	15	5
BD150X75X75D70	150	75	75	60	15	7
BD200X75X75D70	200	75	75	60	15	9
BD250X75X75D70	250	75	75	60	15	11
BD340X75X75D70	340	75	75	65	10	15
BD150X100X58D70	150	100	58	38	20	7
BD241X100X58D70	241	100	58	38	20	11
BD150X100X100D70	150	100	100	80	20	12
BD300X100X100D70	300	100	100	80	20	24
BD315X130X75D70	315	130	75	35	40	24
BD335X130X75D70	335	130	75	35	40	26
BD375X130X75D70	375	130	75	35	40	29
BD500X130X75D70	500	130	75	35	40	38





## Standard Dimensions & Weights

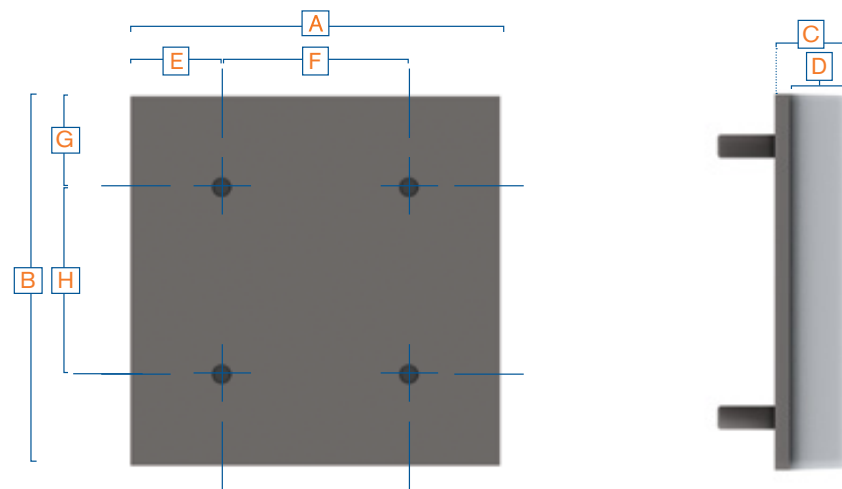
Please contact your local sales office for pricing and availability.

Other sizes can be made on request.

Standard liners are manufactured with M16x40LG studs, other stud sizes are available on request.

Products with a mass over **25kg** we recommend two person or mechanical lifting.

Part No.	Dimensions (mm)								Mass (kg)
	A	B	C	D	E	F	G	H	
SQU-001-BD20/10	300	300	30	20	74	152	74	152	21
RECT-0001-BD20/10	148	300	30	20	74	-	74	152	11
RECT-9001-BD20/10	452	300	30	20	74	304	74	152	<b>32</b>
RECT-0007-BD20/10	452	148	30	20	74	304	74	-	16
S-001-BD20/10	296	296	30	20	73	150	73	150	21
R-0001-BD20/10	146	296	30	20	73	-	73	150	10
R-9001-BD20/10	446	296	30	20	73	300	73	150	<b>31</b>
R-0007-BD20/10	446	146	30	20	73	300	73	-	15



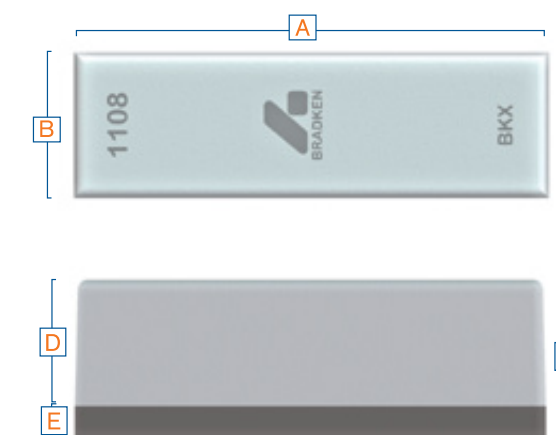
## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.

Other sizes can be made on request.

Products with a mass over **25kg** we recommend two person or mechanical lifting.

Part No.	Dimensions (mm)					Mass (kg)
	A	B	C	D	E	
BD300X300X20D70	300	300	20	14	6	14
BD294X120X30D70	294	120	30	20	10	8
BD294X222X30D70	294	222	30	20	10	15
BD296X146X30D70	296	146	30	20	10	10
BD296X296X30D70	296	296	30	20	10	21
BD344X120X30D70	344	120	30	20	10	10
BD354X354X30D70	354	354	30	20	10	<b>30</b>
BD400X366X30D70	400	366	30	20	10	<b>34</b>
BD430X210X30D70	430	210	30	20	10	21
BD432X120X30D70	432	120	30	20	10	12
BD595X310X30D70	595	310	30	20	10	<b>43</b>
BD75X50X32D70	75	50	32	22	10	1
BD300X50X32D70	300	50	32	22	10	4
BD100X100X50D70	100	100	50	25	25	4
BD152X75X38D70	152	75	38	28	10	3
BD436X240X40D70	436	240	40	30	10	<b>33</b>
BD152X75X50D70	152	75	50	40	10	4
BD370X220X60D70	370	220	60	50	10	<b>38</b>
BD370X230X60D70	370	230	60	50	10	<b>40</b>
BD200X120X71D70	200	120	71	55	16	13
BD200X100X90D70	200	100	90	75	15	14
BD300X140X100D70	300	140	100	80	20	<b>33</b>







Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.  
Other sizes can be made on request.

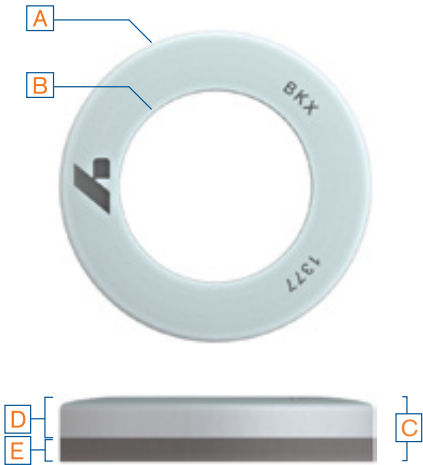
Part No.	Dimensions (mm)					Mass (kg)
	A	B	C	D	E	
BD75X27D70	75	-	27	17	10	0.8
BD90X32D70	90	-	32	20	12	1.4
BD115X32D70	115	-	32	20	12	2.2
BD150X41D70	150	-	41	25	16	4.8



Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.  
Other sizes can be made on request.

Part No.	Dimensions (mm)					Mass (kg)
	A	B	C	D	E	
BD75(25)X27D70	75	25	27	17	10	0.8
BD100(50)X27D70	100	50	27	17	10	1.2
BD100(70)X35D70	100	70	35	25	10	1.1
BD130(80)X27D70	130	80	27	17	10	1.7

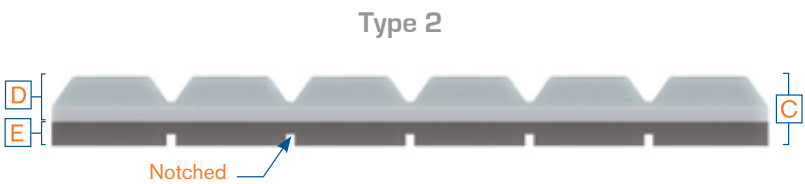
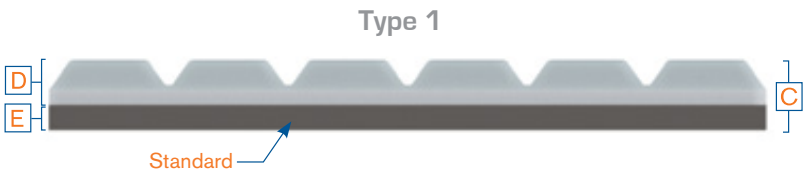




## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.  
Other sizes can be made on request.

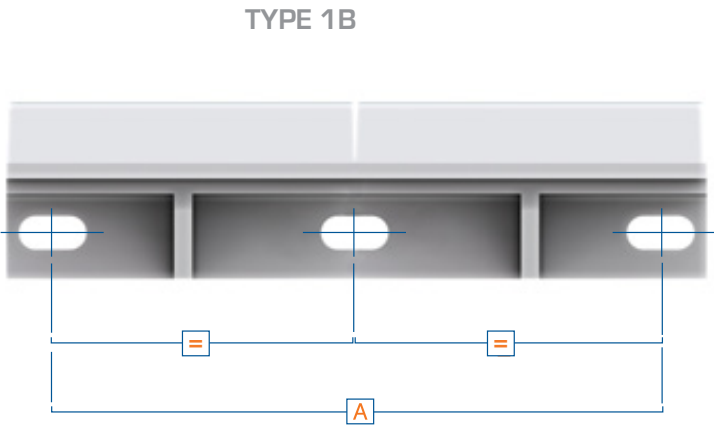
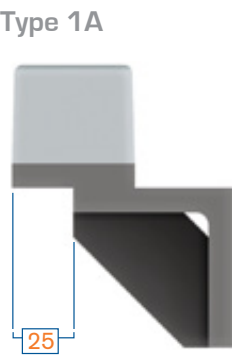
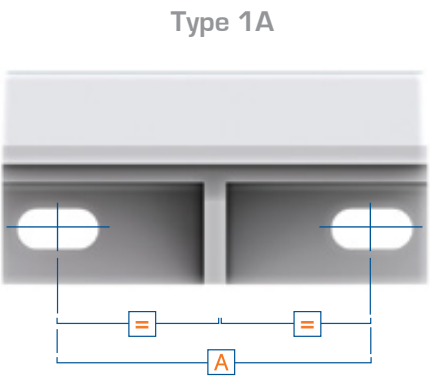
Part No.	Type	Dimensions (mm)					Mass (kg)
		A	B	C	D	E	
BD240X40X23D70	1	240	40	23	15	8	1.5
BD240X40X23D70N	2	240	40	23	15	8	1.5
BD240X50X23D70	1	240	50	23	15	8	1.9
BD240X50X23D70N	2	240	50	23	15	8	1.8
BD240X65X23D70	1	240	65	23	15	8	2.5
BD240X65X23D70N	2	240	65	23	15	8	2.4
BD240X90X29D70N	2	240	90	29	17	12	4.5
BD240X130X29D70N	2	240	130	29	17	12	6.4



## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.  
Other sizes can be made on request.

Part No.	Type	Block Size	Mount Type	A (mm)	Mass (kg)
BD128X50X50D70BKT	1A	128X50X50	128X65X65X10 ANGLE	68	3.7
BD190X50X50D70BKT	1A	190X50X50	190X65X65X10 ANGLE	130	5.4
BD210X50X50D70BKT	1A	210X50X50	210X65X65X10 ANGLE	150	6.0
BD230X50X50D70BKT	1A	230X50X50	230X65X65X10 ANGLE	170	6.6
BD432X50X50D70BKT	1B	432X50X50	432X65X65X10 ANGLE	372	12.4

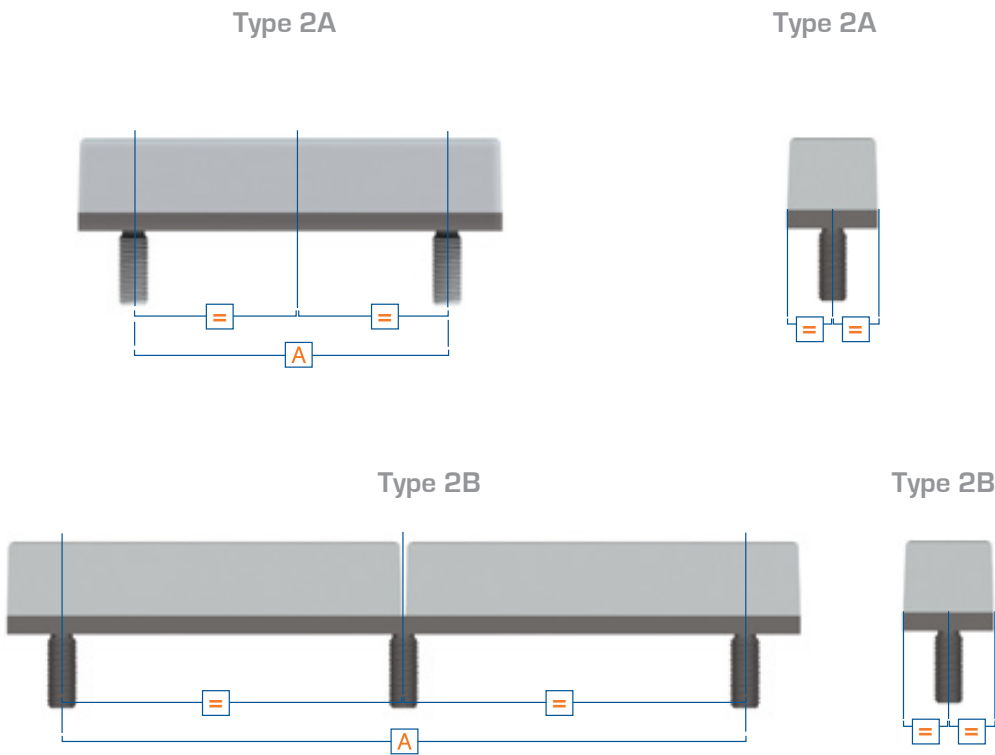




Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.  
Other sizes and stud sizes can be made on request.

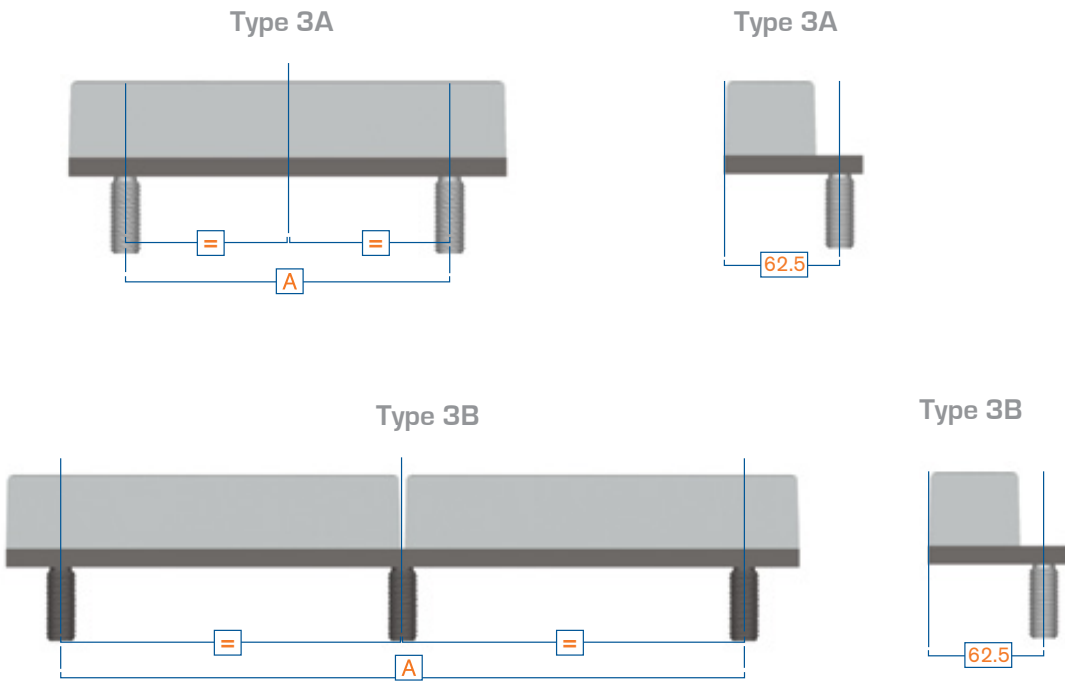
Part No.	Type	Block Size	Mount Type	A (mm)	Mass (kg)
BD128X50X50D70STD2	2A	128X50X50	M16X40mm STUDS (X2)	68	3
BD150X50X50XD70STD2	2A	150X50X50	M16X40mm STUDS (X2)	90	3
BD190X50X50D70STD2	2A	190X50X50	M16X40mm STUDS (X2)	130	4
BD210X50X50D70STD2	2A	210X50X50	M16X40mm STUDS (X2)	150	4
BD230X50X50D70STD2	2A	230X50X50	M16X40mm STUDS (X2)	170	5
BD294X50X50XD70STD2	2A	294X50X50	M16X45mm STUDS (X2)	150	6
BD300X50X50XD70STD2	2A	300X50X50	M16X40mm STUDS (X2)	152	6
BD432X50X50D70STD3	2B	432X50X50	M16X40mm STUDS (X3)	372	8



Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.  
Other sizes and stud sizes can be made on request.

Part No.	Type	Block Size	Mount Type	A (mm)	Mass (kg)
BD190X50(75)X50STD2	3A	190X50(75)X50	M16X40mm STUDS (X2)	130	4.3
BD230X50(75)X50STD2	3A	230X50(75)X50	M16X40mm STUDS (X2)	170	5.2
BD432X50(75)X50STD3	3B	432X50(75)X50	M16X40mm STUDS (X3)	372	9.6



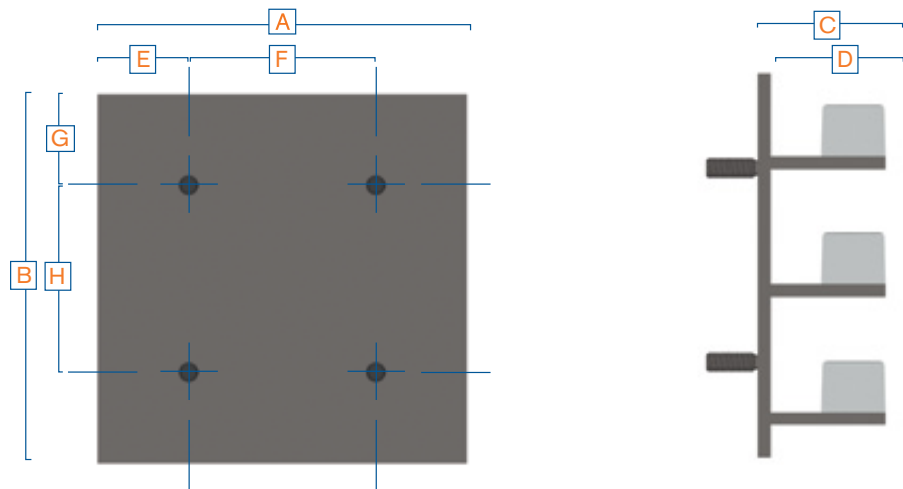




Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.  
Other sizes can be made on request.  
Standard liners are manufactured with M16x40LG studs, other stud sizes are available on request.  
Products with a mass over 25kg we recommend two person or mechanical lifting.

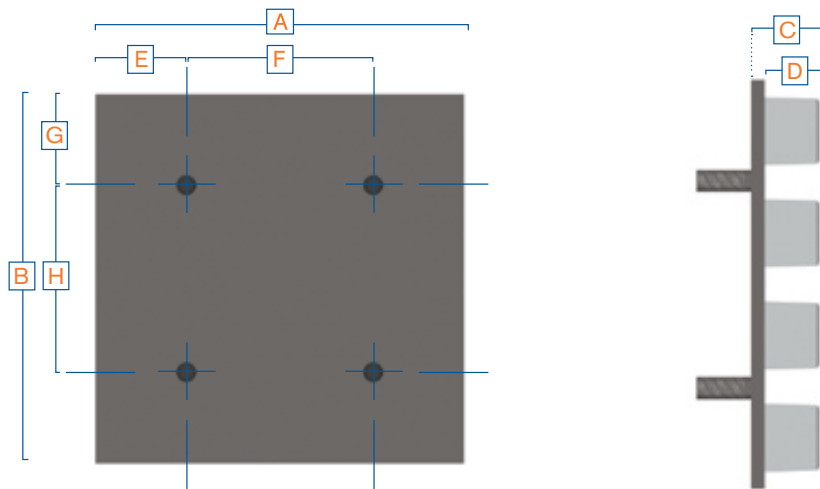
Part. No.	Dimensions (mm)								Mass (kg)
	A	B	C	D	E	F	G	H	
BDL300X300X90D70STD4	300	300	100	90	74	152	74	152	27
BDL300X150X90D70STD2	148	300	100	90	74	-	74	152	14
BDL150X300X90D70STD2	300	148	100	90	74	152	74	-	10
BDL296X296X90D70STD4	296	296	100	90	73	150	73	150	27
BDL296X146X90D70STD2	146	296	100	90	73	-	73	150	13
BDL146X296X90D70STD2	296	146	100	90	73	150	73	-	10



Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.  
Other sizes can be made on request.  
Other hole sizes are available on request.  
Standard Liners are manufactured with M16x40LG studs, other stud sizes are available on request.  
Products with a mass over 25kg we recommend two person or mechanical lifting.

Part No.	Dimensions (mm)								Mass (kg)
	A	B	C	D	E	F	G	H	
BDT300X300X50STD4-1	300	300	50	40	74	152	74	152	26
BDT300X150X50STD2-1	148	300	50	40	74	-	74	152	13
BDT300X150X50STD2-2	300	148	50	40	74	152	74	-	13
BDT296X296X50STD4-1	296	296	50	40	73	150	73	150	26
BDT296X146X50STD2-1	146	296	50	40	73	-	73	150	13
BDT296X146X50STD2-2	296	146	50	40	73	150	73	-	13





# duatrap hd

## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.

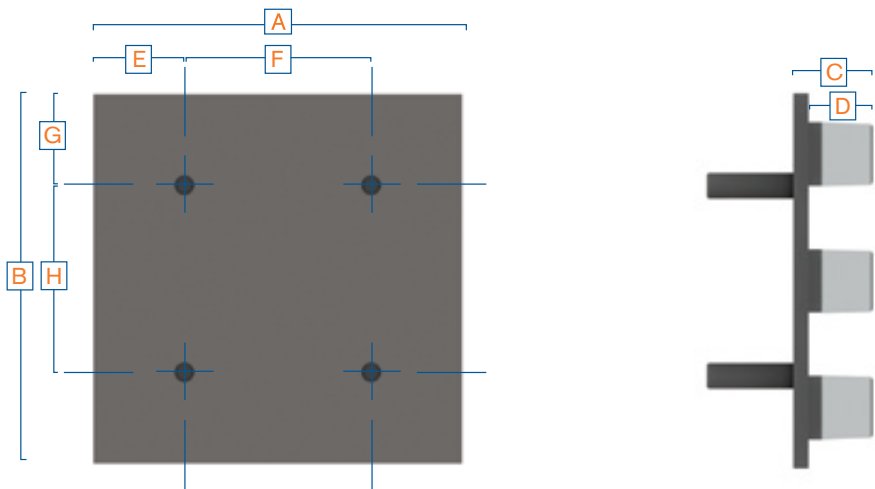
Other sizes can be made on request.

Other hole sizes are available on request.

Standard liners are manufactured with M20x50LG c/sunk bolts, other bolts available on request.

Products with a mass over 25kg we recommend two person or mechanical lifting.

Part No.	Dimensions (mm)								Mass (kg)
	A	B	C	D	E	F	G	H	
SQU-001-BDTHD50/12	300	300	62	50	74	152	74	152	26
RECT-0001-BDTHD50/12	148	300	62	50	74	-	74	152	13
S-001-BDTHD50/12	296	296	62	50	73	150	73	150	26
R-0001-BDTHD50/12	146	296	62	50	73	-	73	150	13



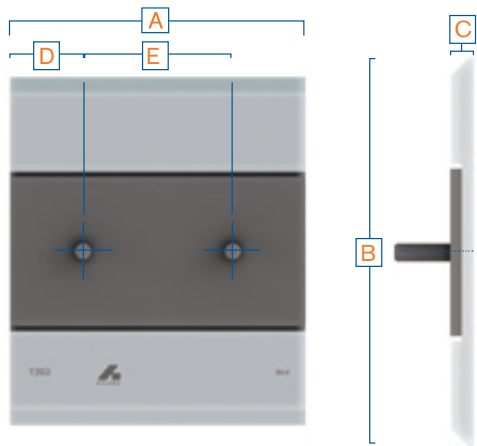
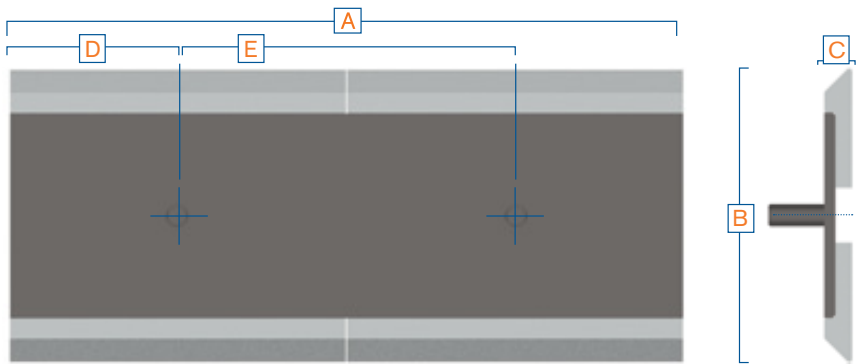
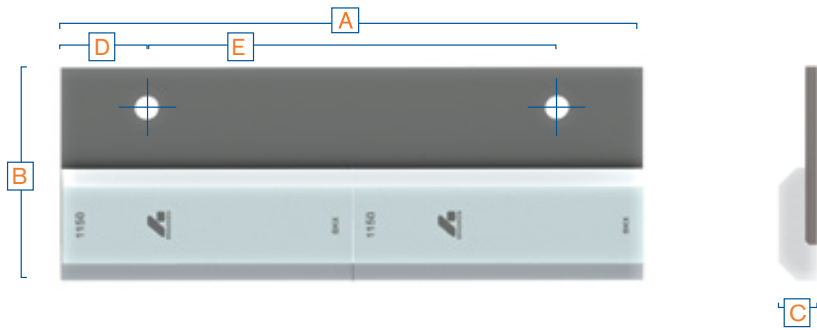
# skirtliners

## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.

Other sizes and stud sizes can be made on request.

Part No.	Dimensions (mm)					Mount Type	Mass (kg)
	A	B	C	D	E		
BD496X180X32D70	496	180	32	73	350	21MM DIA HOLE (X2)	14
BD496X220X20D70STD2	496	220	20	123	250	M16X40LG STUDS (X2)	21
BD296X350X20D70STD2	296	350	20	73	150	M16X50LG STUDS (X2)	16







## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.

Part No.	Dimensions (mm)						Mass (kg)
	A	B	C	D	E	F	
BD280X180(170)X50D70	280	180	170	50	38	12	16
BD280X170(160)X50D70	280	170	160	50	38	12	15
BD280X160(150)X50D70	280	160	150	50	38	12	14
BD280X150(140)X50D70	280	150	140	50	38	12	13
BD280X140(130)X50D70	280	140	130	50	38	12	12
BD300X190(170)X50D70	300	190	170	50	38	12	17
BD300X170(150)X50D70	300	170	150	50	38	12	15
BD300X150(130)X50D70	300	150	130	50	38	12	13
BD300X130(110)X50D70	300	130	110	50	38	12	11
BD300X110(90)X50D70	300	110	90	50	38	12	10
BD300X220(212)X50D70	300	220	212	50	38	12	21
BD300X212(204)X50D70	300	212	204	50	38	12	20
BD300X204(196)X50D70	300	204	196	50	38	12	19
BD300X196(188)X50D70	300	196	188	50	38	12	18
BD300X188(180)X50D70	300	188	180	50	38	12	18
BD305X150(141)X50D70	305	150	141	50	38	12	14
BD305X141(131)X50D70	305	141	131	50	38	12	13
BD305X131(122)X50D70	305	131	122	50	38	12	12
BD305X122(113)X50D70	305	122	113	50	38	12	11
BD305X113(103)X50D70	305	113	103	50	38	12	10
BD305X103(94)X50D70	305	103	94	50	38	12	10
BD305X94(84)X50D70	305	94	84	50	38	12	9
BD305X84(75)X50D70	305	84	75	50	38	12	8
BD308X164(148)X50D70	308	164	148	50	38	12	15
BD308X132(116)X50D70	308	132	116	50	38	12	12
BD327X107(95)X42D70	327	107	95	42	32	10	9
BD327X82(70)X42D70	327	82	70	42	32	10	7
BD328X100(90)X50D70	328	100	90	50	40	10	10
BD328X90(80)X50D70	328	90	80	50	40	10	9
BD328X80(70)X50D70	328	80	70	50	40	10	8
BD328X70(60)X50D70	328	70	60	50	40	10	7
BD328X60(50)X50D70	328	60	50	50	40	10	6



## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.

Products with a mass over 25kg we recommend two person or mechanical lifting.

Part No.	Dimensions (mm)					Mass (kg)
	A	B	C	D	E	
BD200X150X32D70	200	150	32	20	12	8
BD250X150X32D70	250	150	32	20	12	9
BD250X250X32D70	250	250	32	20	12	16
BD200X150X45D70	200	150	45	20	25	11
BD250X150X45D70	250	150	45	20	25	13
BD250X250X45D70	250	250	45	20	25	22
BD200X150X75D70	200	150	75	50	25	18
BD250X150X75D70	250	150	75	50	25	22
BD250X250X75D70	250	250	75	50	25	37

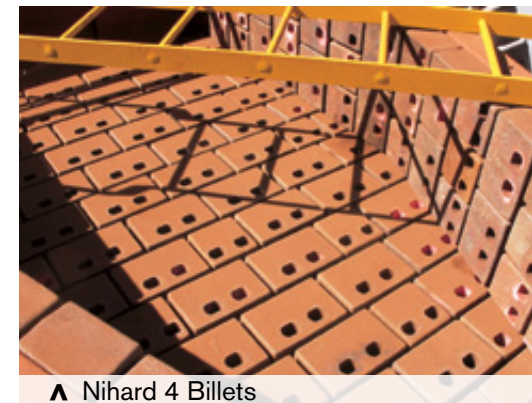




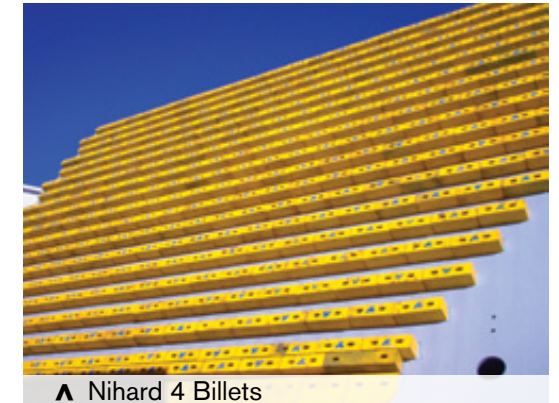


**Nihard** is a well-established white iron product alloyed with nickel and chromium to give significant abrasion and impact resistant properties. The structure of **Nihard** is composed of iron and chromium carbides, fixed in a matrix rendered martensitic by the nickel content. This structure allows **Nihard** to be utilised in abrasive and high impact conditions found throughout the mining and mineral processing industries.

Bradken **Nihard** products include billets and liner plates that can be made to the customers specification or supplied from our range of stock sizes. Bradken's **Nihard** products can be custom designed to meet any situation regardless of any size and shape concerns. Bradken can also supply cut and shaped liners to be strategically placed on fixed plant equipment so that a unique wear package can be created, maximising wear life. This makes **Nihard** the perfect material for chutes, drop boxes, bin and hopper liners.



▲ Nihard 4 Billets



▲ Nihard 4 Billets

Bradken primarily supplies cast billet and liner plates produced to the **Nihard** 4 specifications. However, Bradken can produce billets and liner plates from the following alloys on special request:

- **Nihard** 1 & 2
- 27 Chrome Alloy
- 15/3 White Iron
- 20/1 White Iron
- H1A Manganese Steel



## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.

Other sizes and custom shape can be made on request.

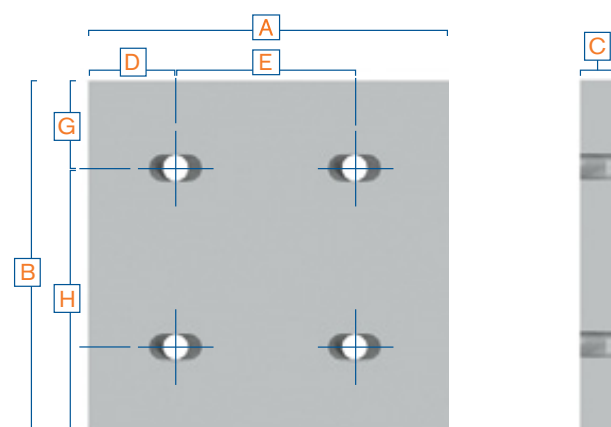
Liners can be cut to size on request.

Liner bolts are available on request.

Cast holes to suit liner bolts M16.

Products with a mass over **25kg** we recommend two person or mechanical lifting.

Part No.	Ref No.	Dimensions (mm)							Mass (Kg)
		A	B	C	D	E	G	H	
NH300X300X25-2H	BKD1160	298	298	25	149	-	74	150	17
NH300X150X25-2H	BKD1177	148	298	25	74	-	74	150	9
D04113		395	395	32	72.5	250	72.5	250	<b>39</b>
BKD1054ITM1	BKD1054-01	300	300	32	74	152	74	152	23
BKD1054ITM2	BKD1054-02	300	150	32	74	152	75	-	11



## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.

Other sizes and custom shape can be made on request.

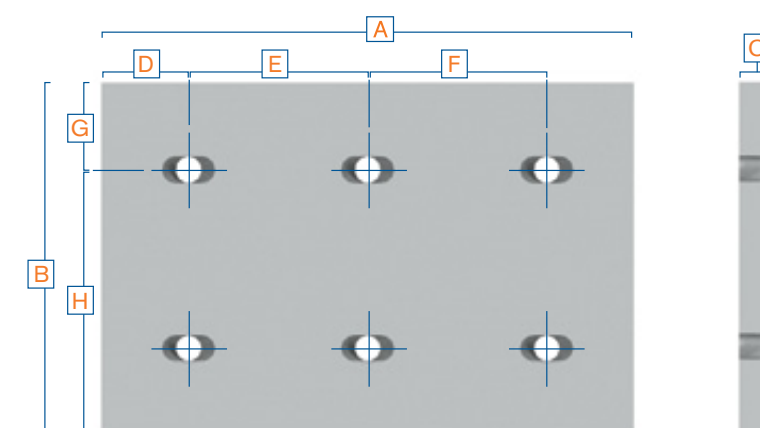
Liners can be cut to size on request.

Bolts are available on request.

Cast holes to suit liner bolts M20.

Products with a mass over **25kg** we recommend two person or mechanical lifting.

Part No.	Ref No.	Dimensions								Mass (Kg)
		A	B	C	D	E	F	G	H	
D03779	L1	296	296	20	73	150	-	73	150	14
D03786	L2	196	296	20	98	-	-	73	150	9
D03787	L3	146	296	20	73	-	-	73	150	7
D03792	L5	96	296	20	48	-	-	73	150	5
D03798	L6	96	196	20	48	-	-	60.5	75	3
D013134		296	296	20	73	150	-	148	-	14
D013135		296	350	20	73	150	-	50	-	17
BKD-1193	BKD1193	148	298	25	74	-	-	74	150	9
BKD-1194	BKD1194	223	298	25	111.5	-	-	74	150	13
BKD-1195	BKD1195	298	298	25	149	-	-	74	150	17
D04064	N1	146	296	32	73	-	-	73	150	11
D04065	N2	196	296	32	98	-	-	73	150	15
D04066	N3	296	296	32	73	150	-	73	150	22
D04068	N5	96	296	32	48	-	-	73	150	7
D04069	N6	96	196	32	48	-	-	60.5	75	5
H02547		750	610	32	102.5	545	-	102.5	405	<b>115</b>
H02585		750	395	32	102.5	545	-	102.5	190	<b>75</b>
D02418		303	73	32	49	102.5	102.5	36.5	-	6
D02521		303	98	32	49	102.5	102.5	49	-	8
D02398	MK-2	300	300	32	74	152	-	150	-	23
D05758	S1A	452	300	32	74	152	152	74	152	<b>35</b>
D04793	S6A	300	300	32	74	152	-	74	152	23
D02747	S97-2	300	148	32	74	152	-	74	-	11
D012895	ML3	300	300	32	74	152	-	74	152	23
D012896	ML1	300	148	32	74	152	-	74	-	11



## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.

Other sizes and custom shape can be made on request.

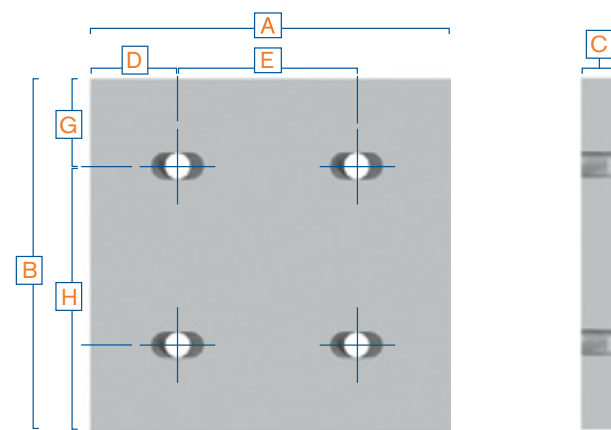
Liners can be cut to size on request.

Bolts are available on request.

Cast holes to suit liner bolts M22.

Products with a mass over **25kg** we recommend two person or mechanical lifting.

Part No.	Ref No.	Dimensions							Mass (Kg)
		A	B	C	D	E	G	H	
H02140	L1	444	444	32	70	304	70	304	50
D00244	L3	444	292	32	70	304	70	152	33
D00249	L4	444	140	32	70	304	70	-	16
D00240	L18	292	292	32	70	152	70	152	22
D00250	L6	292	140	32	70	152	70	-	10
D00243	L2	216	444	32	70		70	304	24
D01774	L3W	452	300	32	74	304	74	152	34
D01775	L4W	452	148	32	74	304	74	-	17
D01777	L18W	300	300	32	74	152	74	152	23
D01776	L6W	300	148	32	74	152	74	-	11
D02324	L2W	224	452	32	74		74	304	25



## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.

Other sizes and custom shape can be made on request.

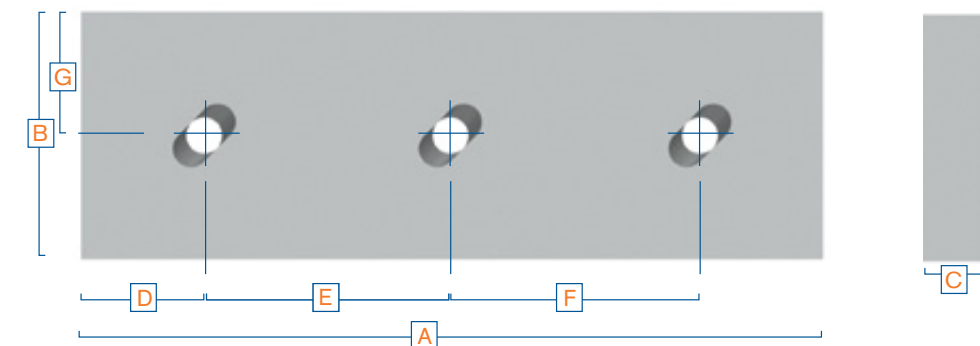
Liners can be cut to size on request.

Bolts are available on request.

Cast holes to suit liner bolts M20.

Products with a mass over **25kg** we recommend two person or mechanical lifting.

Part No.	Ref No.	Dimensions (mm)							Mass (Kg)
		A	B	C	D	E	F	G	
D00379	S4	452	72	32	112	228	-	36	9
H00519	S9	544	148	32	135	274	-	74	21
D00362	S11	480	72	32	119	242	-	36	9
D00365	S14	264	148	32	65	134	-	74	10
D00366	S15	388	84	32	96	196	-	42	9
D00369	S18	300	110	32	74	152	-	55	9
D00370	S19	328	186	32	81	83	83	93	16
H00511	S20	632	186	32	104	212	212	93	30
D00371	S21	484	206	32	79	163	163	103	26
D00372	S22	364	116	32	90	184	-	58	11
D00520S	S96	300	300	32	74	152	-	150	23
D00384S	S97	300	148	32	74	152	-	112	11
D00385	S98	300	224	32	74	152	-	112	17
D00386	S99	452	300	32	112	228	-	150	34
D00360	S101	452	148	32	112	228	-	74	17





## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.

Other sizes and custom shape can be made on request.

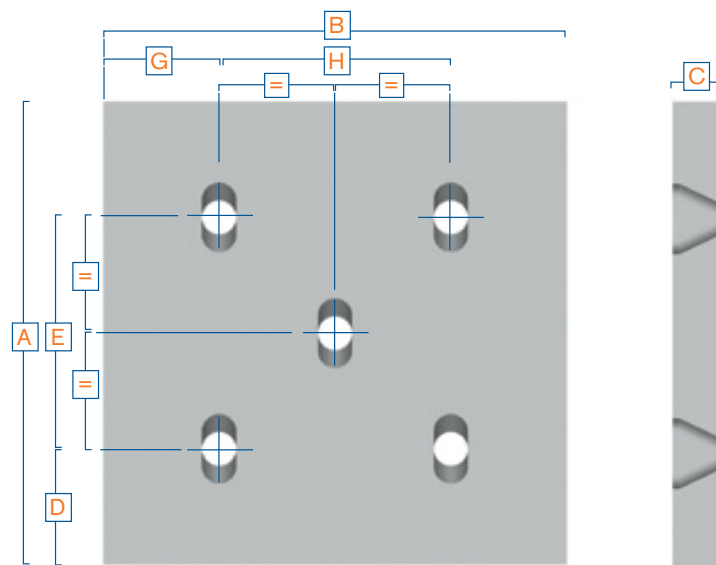
Liners can be cut to size on request.

Bolts are available on request.

Cast holes to suit liner bolts M20.

Products with a mass over **25kg** we recommend two person or mechanical lifting.

Part No.	Ref No.	Dimensions							Mass (Kg)
		A	B	C	D	E	G	H	
D00358	S1	452	300	32	112	228	74	152	35
D00381S	S6	300	300	32	74	152	74	152	23
D00518	S7	404	300	32	100	204	74	152	32
D00363	S12	452	264	32	112	228	65	134	30
D00509	S13	376	264	32	93	190	65	134	25
D00367	S16	388	300	32	96	196	74	152	30
D00359	S100	544	300	32	135	274	74	152	41



## Liner Bolts

Please contact your local sales office for pricing and availability.

Ref No.	Description
BK19471-1	M16x62 BOLT C/W NYLOC N&W
S03777	M16x75 BOLT C/W HEX N&W
S013054	M16x75 BOLT C/W NYLOC N&W
S011865	M20x50 BOLT C/W N&W
S01288	M20x63 BOLT C/W HEX N&W
S011470	M20x63 BOLT ONLY
S01075	M20x70 BOLT C/W NUT & SPRING WASHER
S011989	M20x75 BOLT C/W CONE N&W
S013181	M20x75 BOLT C/W HEX NUT & 45OD O/SIZE WASHER
S013184	M20x75 BOLT C/W HEX NUT, SPRING & FLAT WASHER
S01239	M20x75 BOLT C/W N&W
S05841	M20x75 BOLT C/W NYLOC N&W
S05841GALV	M20x75 BOLT C/W NYLOC NUT & O/S GALVANISED FLAT WASHER
S013104	M20x75 BOLT C/W NYLOC NUT & 45OD O/SIZE WASHER
S011989G	M20x75 BOLT C/W CONE LOCK NUT & GALVANISED FLAT WASHER
S011097	M20x75 LINER BOLT (BOLT ONLY)
S013533	M20x90 LINER BOLT (BOLT ONLY)
S03497	M20x90 BOLT C/W N&W
S013185	M20x90 BOLT C/W HEX NUT, SPRING & FLAT WASHER
S013136	M20x90 BOLT C/W NYLOC N&W
S011098	M20x100 LINER BOLT (BOLT ONLY)
S011990S	M20x100 BOLT C/W CONE N&W
S01464	M20x100 BOLT C/W N&W
S013535	M20x100 BOLT C/W NYLOC NUT & SPRING WASHER
S07106	M20x100 BOLT C/W NYLOC N&W
S02102	M22x75 HH BOLT C/W N&W
S07194	M22x75 HH BOLT C/W NUT, FLAT&SPRING WASHER
S06344	M22x75 HH BOLT C/W NYLOC NUT & WASHER
S06344 Cone Lock	M22x75 HH BOLT C/W CONE LOCK NUT & WASHER
S04617	M22x75LINER BOLT (BOLT ONLY)
S07237	M22x95 HH BOLT C/W NUT,FLAT & SPRING WASHER
S06345	M22x95 HH BOLT C/W NYLOC NUT & WASHER
S02845	M22x95 HH BOLT, HEX NUT & FLAT WASHER
M02124	M22x95 LINER BOLT
S012897	M20x75 BILLET BOLT GR 8.8 c/w HEX NUT & FLAT WASHER
S013183	M20x75 BILLET Bolt GR 8.8 c/w HEX NUT & SPRING WASHER
S013180	M20x75 BILLET Bolt GR 8.8 c/w NYLOC NUT & FLAT WASHER

# nihard billets

## Standard Dimensions & Weights

*Bolt Type: M20 Hex Head.*

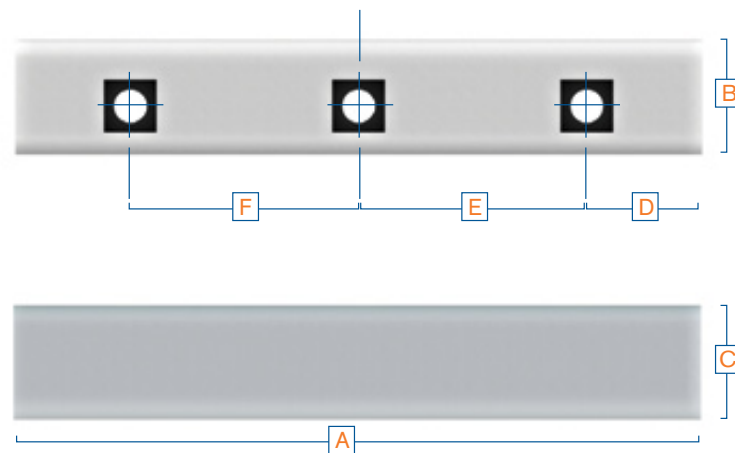
*Please contact your local sales office for pricing and availability.*

*Other sizes can be made on request.*

*Liners can be cut to size on request.*

*Bolts available on request.*

Part No.	Ref No.	Dimensions (mm)						Mass (kg)
		A	B	C	D	E	F	
D00927S	12" Billet	305	76	76	76.5	152	-	13
D00926S	18" Billet	457	76	76	76.5	152	152	19



# nihard billets

## Standard Dimensions & Weights

*Bolt Type: M20 Hex Head.*

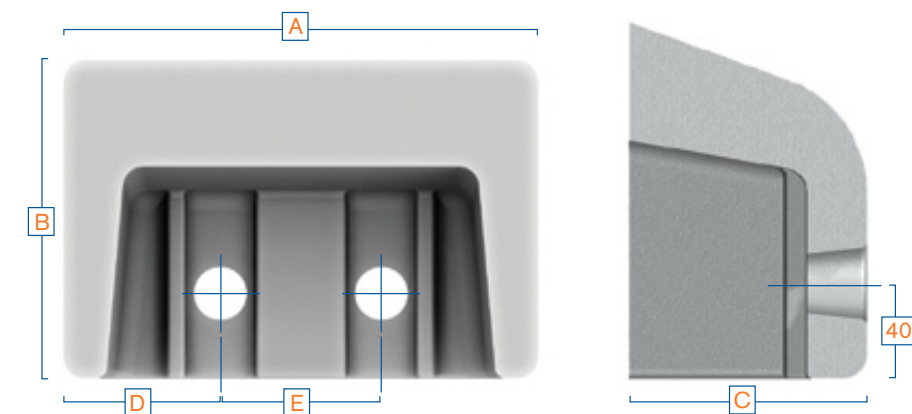
*Please contact your local sales office for pricing and availability.*

*Liners can be cut to size on request.*

*Other sizes can be made on request.*

*Bolts available on request.*

Part No.	Ref No.	Dimensions (mm)					Mass (kg)
		A	B	C	D	E	
DW3012S	HB224	224	150	100	74	76	14
DW3011S	HB300	300	150	100	74	152	18

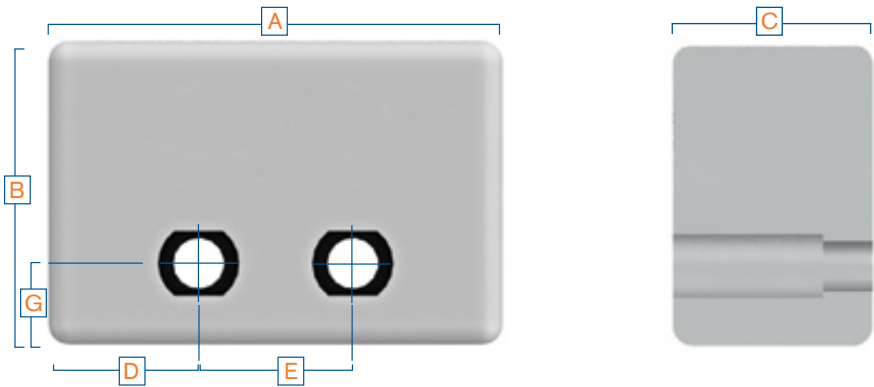




## Standard Dimensions & Weights

Bolt Type: M20 Bolt Hex Head.  
Please contact your local sales office for pricing and availability.  
Liners can be cut to size on request.  
Other sizes can be made on request.  
Bolts available on request.  
Products with a mass over 25kg we recommend two person or mechanical lifting.

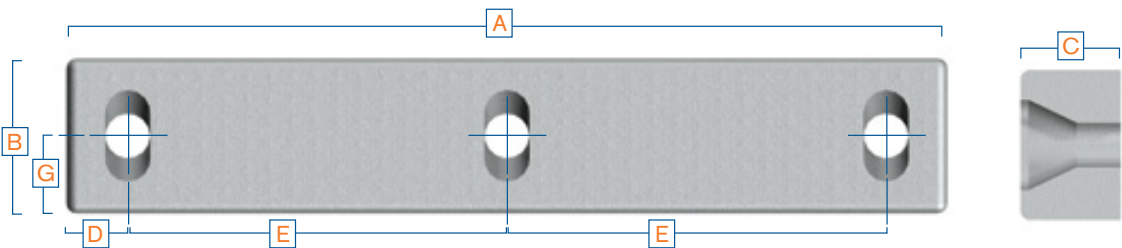
Part No.	Ref No.	Dimensions (mm)						Mass (Kg)
		A	B	C	D	E	G	
DW2874S	B300	300	150	100	74	152	40	33
DW2875S	B224	224	150	100	74	76	40	25



## Standard Dimensions & Weights

50mm thick range accommodates M20 fish tail bolts.  
Please contact your local sales office for pricing and availability.  
Liners can be cut to size on request.  
Other sizes can be made on request.  
Bolts available on request.  
Products with a mass over 25kg we recommend two person or mechanical lifting.

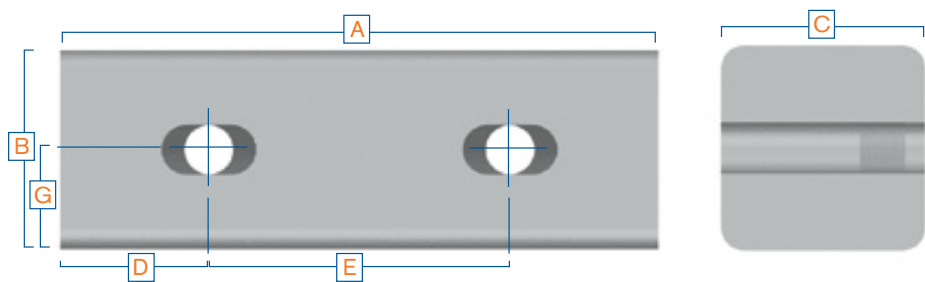
Part No.	Ref No.	Type	Dimensions							Weight (kg)
			A	B	C	D	E	F	G	
DW2971S	B128	1	128	75	50	30	68	-	37.5	3
DW2971S	B210	1	210	75	50	30	150	-	37.5	6
DW2971S	B432	1	432	75	50	30	186	186	37.5	12



## Standard Dimensions & Weights

100mm thick range accommodates M22 fish tail bolts.  
Please contact your local sales office for pricing and availability.  
Liners can be cut to size on request.  
Other sizes can be made on request.  
Bolts available on request.  
Products with a mass over 25kg we recommend two person or mechanical lifting.

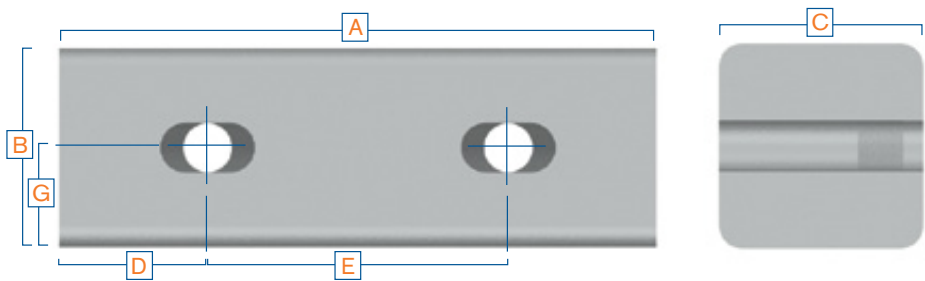
Part No.	Ref No.	Type	Dimensions					G	Weight (kg)
			A	B	C	D	E		
WB1	WB1	1	302	100	100	75	152	50	22
D03536	WB2	1	454	100	100	75	304	50	34



## Standard Dimensions & Weights

Bolt Type: M20 Fishtail.  
Please contact your local sales office for pricing and availability.  
Liners can be cut to size on request.  
Other sizes can be made on request.  
Bolts available on request.  
Products with a mass over 25kg we recommend two person or mechanical lifting.

Part No.	Ref No.	Dimensions (mm)						Mass (Kg)
		A	B	C	D	E	G	
D02292		275	150	100	66	143	40	32
D00294	EBL9	238	150	100	59	120	40	28
D03189	EBL12	340	75	75	70	200	37.5	15
D00293	EBL8	292	75	75	72	148	37.5	13
D02568	EBL11	200	75	75	50	100	37.5	9
D03296	EBL10	150	75	75	40	70	37.5	7





# nihard skirtliners

## Standard Dimensions & Weights

Chamfer location - Y indicates bottom side; B indicates both top and bottom sides.

Please contact your local sales office for pricing and availability.

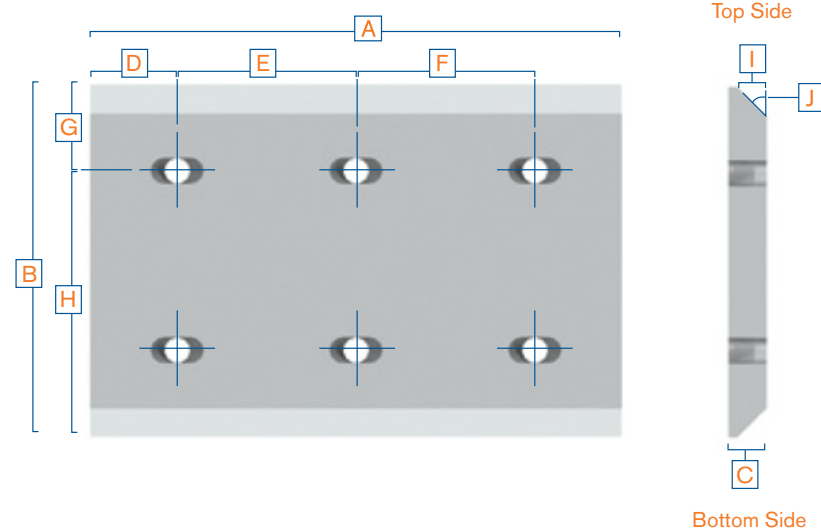
Liners can be cut to size on request.

Other sizes can be made on request.

Bolts available on request.

Products with a mass over 25kg we recommend two person or mechanical lifting.

Part No.	Ref No.	Cast Holes to Suit Liner Bolts:	Dimension (mm)										Mass (Kg)
			A	B	C	D	E	F	G	H	I	J°	
D03775		M16	495	220	32	122.5	250	-	110	-	25	55 B	26
D04078	L1S	M20	296	296	20	73	150	-	73	150	20	45 B	13
D06369	S6C	M20	300	364	32	74	152		106	152	27	45 B	23
D01608	S96C	M20	300	364	32	74	152	-	182	-	27	45 B	24
D09819	S96Cm-2	M20	300	225	32	74	152	-	43	-	27	45 Y	17
D01324	S98C	M20	300	288	32	74	152	-	144	-	27	45 B	17
D04067	N4	M20	296	296	32	73	150	-	73	150	32	45 B	20
D03307		M22	496	260	25	123	250	-	130	-	12.5	45 B	25
D04647	300S	M22	294	309	32	72	150		154.5	-	27	45 B	23
D04646	450S	M22	444	309	32	72	150	150	154.5	-	27	45 B	34
D02872	SL1W	M22	452	296	32	74	304	-	74	-	16	45 Y	33
D06202	SL18W	M22	300	300	32	74	152	-	60	-	16	45 Y	22
D03700	SL3W	M22	300	224	32	74	152	-	60	-	16	45 Y	17



# Chrome Molybdenum skirtliners

## Standard Dimensions & Weights

Chamfer location - Y indicates bottom side.

Please contact your local sales office for pricing and availability.

Liners can be cut to size on request.

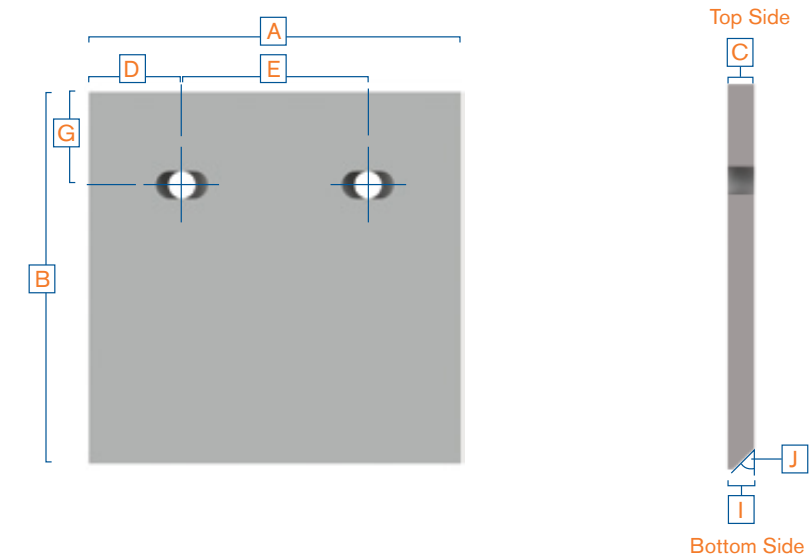
Other sizes can be made on request.

Bolts available on request.

Cast holes to suit liner bolts M22.

Products with a mass over 25kg we recommend two person or mechanical lifting.

Part No.	Ref No.	Dimensions (mm)								Mass (kg)
		A	B	C	D	E	G	I	J°	
D02870	SL1CrMO	444	292	32	70	304	70	16	45 Y	32
D02873	SL1WCrMO	452	296	32	74	304	74	16	45 Y	33
SL18WCMI	SL18WCrMO	300	300	32	74	152	60	16	45 Y	22
SL3WCMI	SL3WCrMO	300	224	32	74	152	60	16	45 Y	17

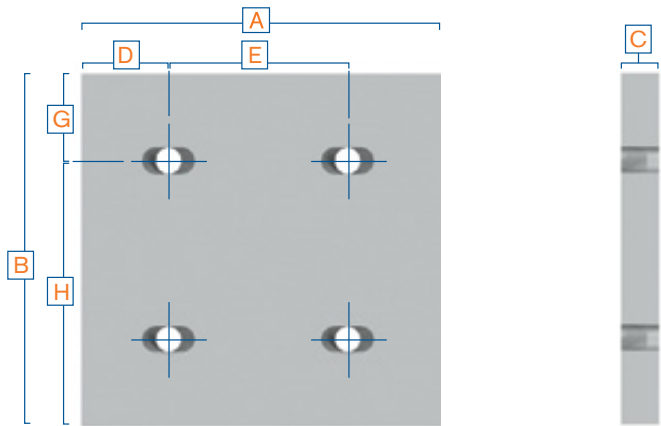


# Chrome Molybdenum

## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.  
Liners can be cut to size on request.  
Other sizes can be made on request.  
Bolts available on request.  
Products with a mass over 25kg we recommend two person or mechanical lifting.

Part No.	Ref No.	Cast Holes to Suit Liner Bolts:	Dimensions (mm)							Mass (kg)
			A	B	C	D	E	G	H	
D01721	L2CrMO	M20	450	221	32	72.5	305	72.5	76	25
D01722	L3CrMO	M20	450	297	32	72.5	305	72.5	152	34
D01719	L4CrMO	M20	450	145	32	72.5	305	72.5	-	16
D01723	L6CrMO	M20	297	145	32	72.5	152	72.5	-	11
D01724	L17CrMO	M20	297	221	32	72.5	152	72.5	76	17
D01720	L18CrMO	M20	297	297	32	72.5	152	72.5	152	22
H02783	L1CrMO	M22	444	444	32	70	304	70	304	50
D01820	L3CrMO	M22	444	292	32	70	304	70	152	33
D02785	L4CrMO	M22	444	140	32	70	304	70	-	16
D01969	L18CrMO	M22	292	292	32	70	152	70	152	22
D02786	L6CrMO	M22	292	140	32	70	152	70	-	10
D02784	L2CrMO	M22	444	216	32	70	304	70	-	24
D02105	L3WCrMO	M22	452	300	32	74	304	74	152	34
D02106	L4WCrMO	M22	452	148	32	74	304	74	-	17
D02108	L18WCrMO	M22	300	300	32	74	152	74	152	23
D02107	L6WCrMO	M22	300	148	32	74	152	74	-	11
D02083	L2WCrMO	M22	452	224	32	74	304	74	-	26

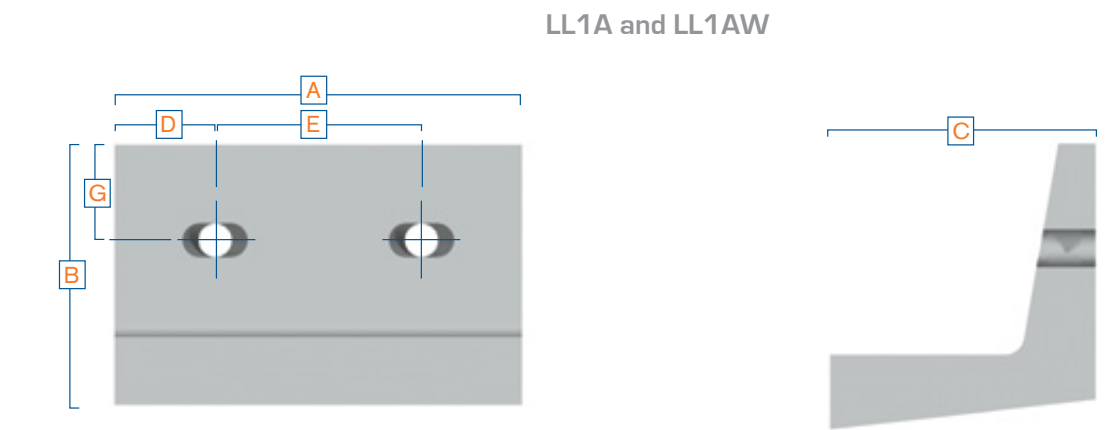
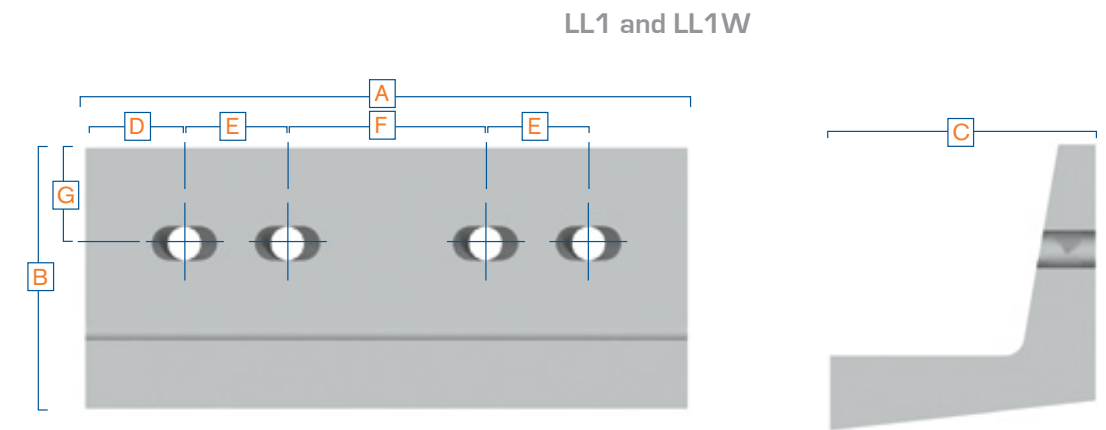


# Hard Lip Liners

## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.  
Cast holes to suit liner bolts M22.  
Liners can be cut to size on request.  
Other sizes can be made on request.  
Bolts available on request.  
Products with a mass over 25kg we recommend two person or mechanical lifting.

Part No.	Ref No.	Dimensions (mm)							Mass (kg)
		A	B	C	D	E	F	G	
H03075	LL1A	304	191	178	76	152	-	71	30
H01779	LL1AW	312	191	178	80	152	-	71	30
H03074	LL1	444	191	178	70	76	152	71	44
H01778	LL1W	452	191	178	74	76	152	71	45





LINER PLATES  
ALUMINA  
CERAMIC  
NOISE REDUCTION  
EXTREME ABRASION  
UNIQUE  
SHAPES  
MAXIMUM RESISTANCE  
LIGHTWEIGHT  
URO TILE

urotile

The **Urotile** range of wear liners combine hard alumina ceramic blocks, chemically and mechanically bonded to an impact resistant polyurethane elastomer. **Urotile** ceramic wear liners are designed for use in the most extreme abrasive environments found in the mining and mineral processing industries. The **Urotile** range of liners encompasses **Urotile**, **Urohex**, **Urocombo**, **Urocube** and **Uromite** liners. The **Urotile** range of liners can also be customised to provide unique shapes for wear packages.

**Features:**

**Maximum Resistance To Abrasion:** The **Urotile** range is manufactured from high alumina ceramic to provide maximum resistance to abrasion.

**Edge Protection:** Leading and trailing edges can be included to protect the ceramic tiles from severe impact on the edges.

**Impact Protection:** The **Uromite** and **Urocombo** liners incorporate impact resistant metallic bars alternated with the polyurethane or ceramic for application in high impact areas.

**Noise Reduction:** The polyurethane medium not only absorbs impact, but also reduces noise caused by bulk material flow.

**Backing Plate:** A unique, light weight backing plate can be included to provide assistance in the knockout of worn liners.

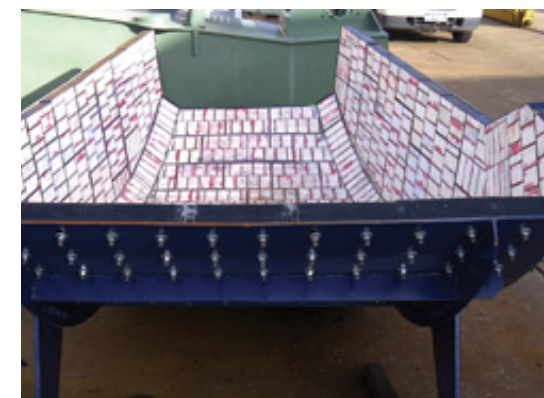
**Ceramic Locking System:** Each ceramic tile used in the liners comes with a patented locking mechanism to prevent tile knock out during severe impact.

**Unique Chemical Treatment:** The ceramic tiles in the **Urotile** range undergo a unique chemical treatment to provide a superior polyurethane to ceramic bond strength.

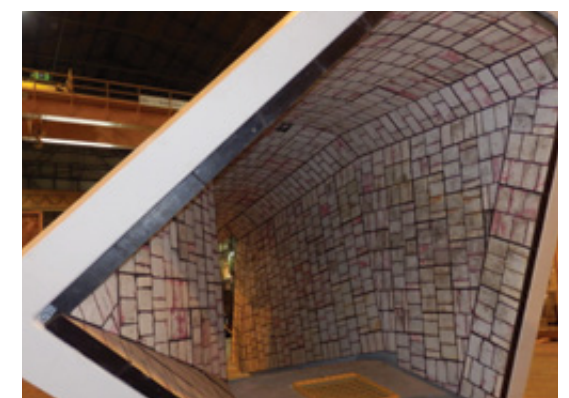
**Customized Liners:** The **Urotile** range of liners can be manufactured into a range of complex shapes with angles and bevelled edges.

**Australian made:** **Urotile** is an Australian manufactured product by Bradken.

**Attachment Methods:** The **Urotile** range of liners can be manufactured to be attached with studs, hooks or key slots.



▲ Urotile Lined Deflector



▲ Urotile Lined Transfer Chute



# Urotile

Please contact your local sales office for pricing and availability.

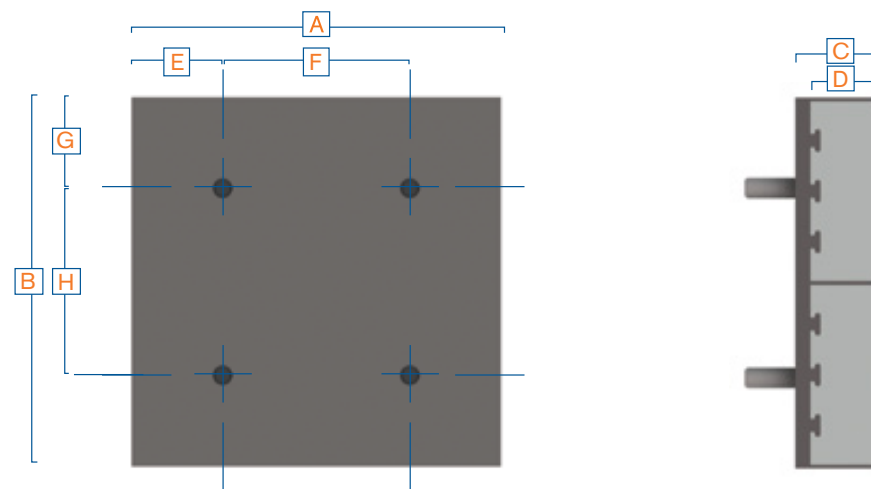
Standard liners are manufactured with M16x40LG studs, other stud sizes are available on request.

Edge protection can be incorporated on request.

Other sizes and custom shapes made on request.

Products with a mass over 25kg we recommend two person or mechanical lifting.

Part Number	Dimensions (mm)								Mass (kg)
	A	B	C	D	E	F	G	H	
SQU-001-UT63/50	300	300	63	50	74	152	74	152	17
RECT-0001-UT63/50	148	300	63	50	74	-	74	152	9
RECT-9001-UT63/50	452	300	63	50	74	304	74	152	26
RECT-0007-UT63/50	452	148	63	50	74	304	74	-	13
S-001-UT63/50	296	296	63	50	73	150	73	150	17
R-0001-UT63/50	146	296	63	50	73	-	73	150	8
R-9001-UT63/50	446	296	63	50	73	300	73	150	25
R-0007-UT63/50	446	146	63	50	73	300	73	-	12
SQU-001-UT50/38	300	300	50	38	74	152	74	152	13
RECT-0001-UT50/38	148	300	50	38	74	-	74	152	7
RECT-9001-UT50/38	452	300	50	38	74	304	74	152	20
RECT-0007-UT50/38	452	148	50	38	74	304	74	-	10
S-001-UT50/38	296	296	50	38	73	150	73	150	13
R-0001-UT50/38	146	296	50	38	73	-	73	150	6
R-9001-UT50/38	446	296	50	38	73	300	73	150	20
R-0007-UT50/38	446	146	50	38	73	300	73	-	10
SQU-001-UT40/28	300	300	40	28	74	152	74	152	10
RECT-0001-UT40/28	148	300	40	28	74	-	74	152	5
RECT-9001-UT40/28	452	300	40	28	74	304	74	152	15
RECT-0007-UT40/28	452	148	40	28	74	304	74	-	8
S-001-UT40/28	296	296	40	28	73	150	73	150	10
R-0001-UT40/28	146	296	40	28	73	-	73	150	5
R-9001-UT40/28	446	296	40	28	73	300	73	150	15
R-0007-UT40/28	446	146	40	28	73	300	73	-	7
SQU-001-UT35/22	300	300	35	22	74	152	74	152	8
RECT-0001-UT35/22	148	300	35	22	74	-	74	152	4
RECT-9001-UT35/22	452	300	35	22	74	304	74	152	13
RECT-0007-UT35/22	452	148	35	22	74	304	74	-	6
S-001-UT35/22	296	296	35	22	73	150	73	150	8
R-0001-UT35/22	146	296	35	22	73	-	73	150	4
R-9001-UT35/22	446	296	35	22	73	300	73	150	12
R-0007-UT35/22	446	146	35	22	73	300	73	-	6



# Urocombo

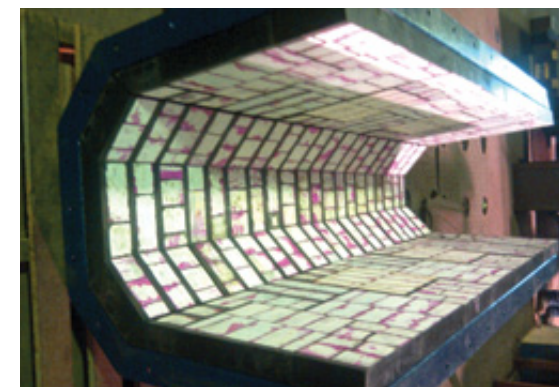
The Urotile range of wear liners combine wear resistant alumina ceramic, bonded to an impact resistant polyurethane elastomer.

Urocombo wear liners are an extension of the Urotile product line, designed for use in severely abrasive environments with a higher degree of impact, found in the mining and mineral processing industries.

The Urocombo liners incorporate AR bars between the alumina ceramic tiles to absorb impact and improve the structural integrity of the liner.

The AR bars are typically Q&T Steel, but can be customised to Nihard or Duablock.

The Urocombo range of liners can be customised to provide unique shapes for chute wear packages.



▲ Combo Lined Chute



▲ Combo Lined Chute

## Supply Benefits:

- Australian Made
- State of the Art Manufacture
- Traceability
- 100% Control of Manufacture
- Reactive and Responsive
- Cost Effective
- Superior Quality

## Product Features:

- Modular Liner
- Customized Liners System
- Maximum Resistance to Abrasion
- Adhesion Strength
- Impact Protection
- Edge Protection
- Noise Reduction



## Rubber Bonded Ceramic Range

The **Rubatile** range of wear liners combine hard alumina ceramic blocks, bonded to an impact resistant rubber. **Rubatile** ceramic wear liners are designed for use in moderate impact applications and severely abrasive environments found in the mining and mineral processing industries.

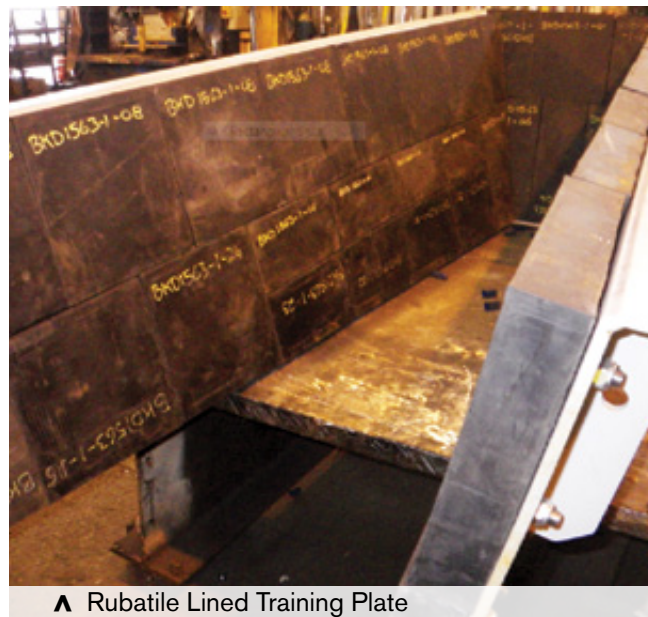
The **Rubatile** range of liners can be customised to provide unique shapes for chute wear packages.



▲ Rubatile Process Line

### Supply Benefits:

- Australian Made
- State of the Art Manufacture
- Traceability
- 100% Control of Manufacture
- Reactive and Responsive
- Cost Effective
- Superior Quality



▲ Rubatile Lined Training Plate

### Product Features:

- Modular Liner
- Customized Liners System
- Maximum Resistance to Abrasion
- Adhesion Strength
- Impact Protection
- Edge Protection
- Noise Reduction

## Standard Dimensions & Weights

Please contact your local sales office for pricing and availability.

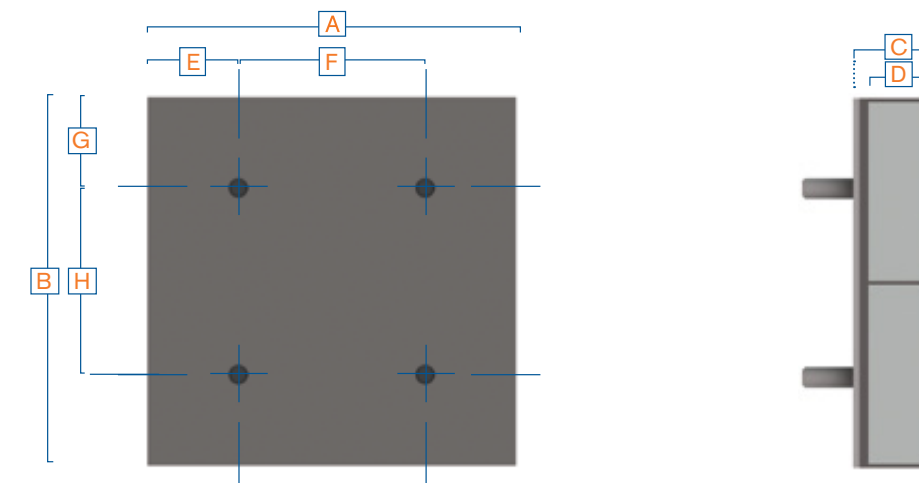
Standard liners are manufactured with M16x40LG studs, other stud sizes are available on request.

Edge protection can be incorporated on request.

Other sizes and custom shapes made on request.

Products with a mass over **25kg** we recommend two person or mechanical lifting.

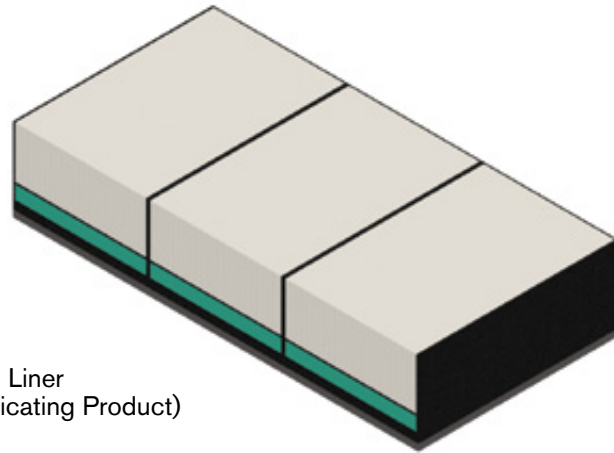
Part No.	Dimensions (mm)								Mass (kg)
	A	B	C	D	E	F	G	H	
SQU-001-RT63/50	300	300	63	50	74	152	74	152	20
RECT-0001-RT63/50	148	300	63	50	74	-	74	152	10
RECT-9001-RT63/50	452	300	63	50	74	304	74	152	31
RECT-0007-RT63/50	452	148	63	50	74	304	74	-	15
S-001-RT63/50	296	296	63	50	73	150	73	150	20
R-0001-RT63/50	146	296	63	50	73	-	73	150	10
R-9001-RT63/50	446	296	63	50	73	300	73	150	30
R-0007-RT63/50	446	146	63	50	73	300	73	-	15
SQU-001-RT50/38	300	300	50	38	74	152	74	152	16
RECT-0001-RT50/38	148	300	50	38	74	-	74	152	8
RECT-9001-RT50/38	452	300	50	38	74	304	74	152	25
RECT-0007-RT50/38	452	148	50	38	74	304	74	-	12
S-001-RT50/38	296	296	50	38	73	150	73	150	16
R-0001-RT50/38	146	296	50	38	73	-	73	150	8
R-9001-RT50/38	446	296	50	38	73	300	73	150	24
R-0007-RT50/38	446	146	50	38	73	300	73	-	12
SQU-001-RT37/25	300	300	37	25	74	152	74	152	12
RECT-0001-RT37/25	148	300	37	25	74	-	74	152	6
RECT-9001-RT37/25	452	300	37	25	74	304	74	152	18
RECT-0007-RT37/25	452	148	37	25	74	304	74	-	9
S-001-RT37/25	296	296	37	25	73	150	73	150	12
R-0001-RT37/25	146	296	37	25	73	-	73	150	6
R-9001-RT37/25	446	296	37	25	73	300	73	150	18
R-0007-RT37/25	446	146	37	25	73	300	73	-	9
SQU-001-RT32/20	300	300	32	20	74	152	74	152	11
RECT-0001-RT32/20	148	300	32	20	74	-	74	152	5
RECT-9001-RT32/20	452	300	32	20	74	304	74	152	16
RECT-0007-RT32/20	452	148	32	20	74	304	74	-	8
S-001-RT32/20	296	296	32	20	73	150	73	150	10
R-0001-RT32/20	146	296	32	20	73	-	73	150	5
R-9001-RT32/20	446	296	32	20	73	300	73	150	16
R-0007-RT32/20	446	146	32	20	73	300	73	-	8



# rubatile v.w.i.p

## Product Overview

The **Rubatile** range of wear liners combine hard alumina ceramic blocks, bonded to an impact resistant rubber.



▲ Rubatile V.W.I.P. Liner  
(Visual Wear Indicating Product)

**Rubatile** ceramic wear liners are designed for use in moderate impact applications and severely abrasive environments found in the mining and mineral processing industries.

The **Rubatile** – V.W.I.P. liners are a visual wear indicating product. It consists of a layer of white coloured alumina ceramic on top of a layer of green coloured alumina ceramic. The colour change indicates when the liner has worn over 80% and has less than 20% wear life remaining. This allows for simple visual inspection of chute liners, and the ability to plan upcoming shuts once the colour change is noticed.

The **Rubatile** range of liners can be customised to provide unique shapes for chute wear packages.

## Supply Benefits:

- Australian made
- State of the art manufacture
- Traceability
- 100% control of Manufacture
- Reactive and Responsive
- Cost Effective
- Superior Quality

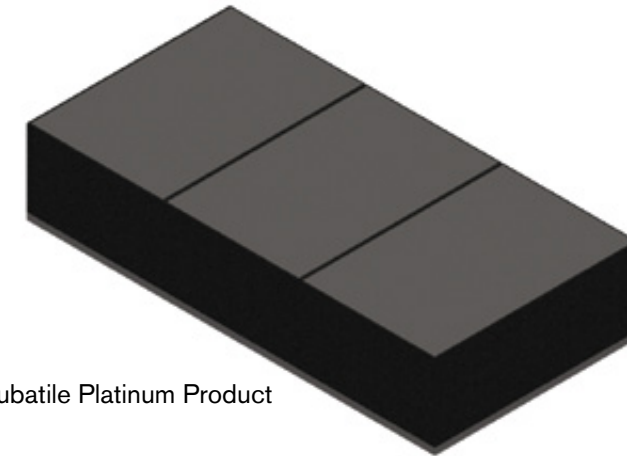
## Product Features:

- Visual Indication at 80% worn state
- Modular Liner
- Customized Liners System
- Maximum Resistance to Abrasion
- Adhesion Strength
- Impact Protection
- Edge Protection
- Noise Reduction

# rubatile platinum

## Product Overview

The **Rubatile** range of wear liners combine wear resistant blocks, bonded to an impact resistant rubber.



▲ Rubatile Platinum Product

**Rubatile Platinum** wear liners are designed for use in severely abrasive environments or chutes that are prone to hang up with Wet Sticky Ore that is found in the mining and mineral processing industries.

Testing has shown that **Rubatile Platinum's** wear resistant tiles are 2.3 times more wear resistant than standard alumina ceramic tiles.

**Rubatile Platinum** liners are 13% lighter compared to alumina ceramic liners of equal thickness.

The **Rubatile Platinum** range of liners can be customised to provide unique shapes for chute wear packages.

## Supply Benefits:

- Australian Made
- State of the Art Manufacture
- Traceability
- 100% Control of Manufacture
- Reactive and Responsive
- Cost Effective
- Superior Quality

## Product Features:

- Maximum Resistance to Abrasion
- Reduces “Hang up” with Wet Sticky Ore
- Modular Liner
- Customised Liners System
- Adhesion Strength
- Edge Protection
- Noise Reduction



# rubacombo

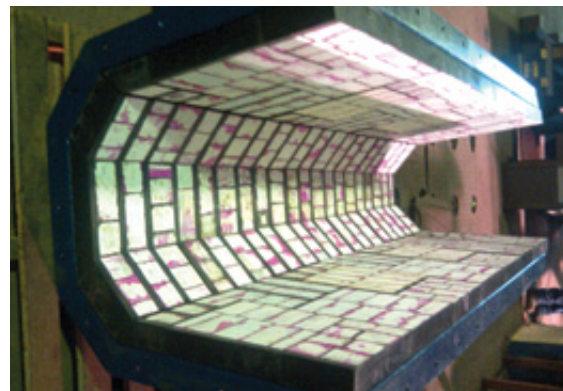
The **Rubatile** range of wear liners combine wear resistant alumina ceramic, bonded to an impact resistant rubber.

**Rubacombo** wear liners are an extension of the **Rubatile** product line, designed for use in severely abrasive environments with a higher degree of impact, found in the mining and mineral processing industries.

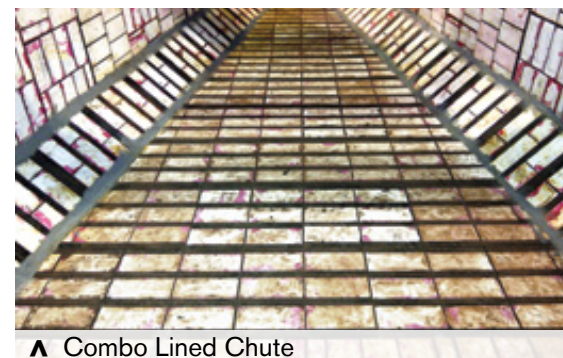
The **Rubacombo** liners incorporate AR bars between the alumina ceramic tiles to absorb impact and improve the structural integrity of the liner.

The AR bars are typically **Q&T Steel**, but can be customised to Nihard or **Duablock**.

The **Rubacombo** range of liners can be customised to provide unique shapes for chute wear packages.



▲ Combo Lined Chute



▲ Combo Lined Chute

## Supply Benefits:

- Australian Made
- State of the Art Manufacture
- Traceability
- 100% Control of Manufacture
- Reactive and Responsive
- Cost Effective
- Superior Quality

## Product Features:

- Modular liner
- Customized Liners system
- Maximum Resistance to Abrasion
- Adhesion Strength
- Impact Protection
- Edge Protection
- Noise Reduction

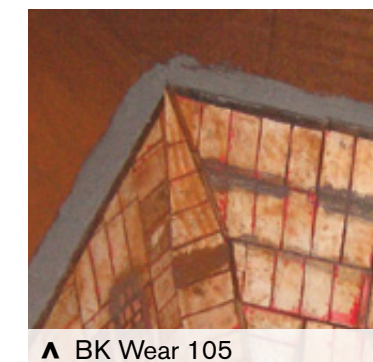
## Epoxies

A complementary product which we recommend to be used to take up gaps between liners thus helping eliminate any premature wear. We offer different grades for different applications so whether it's for a small gap or an ad-hock fast cure fix in a high wear area we will have the right product for you. Each grade of epoxy comes with a variety of ceramic particles giving exceptional wear characteristics.

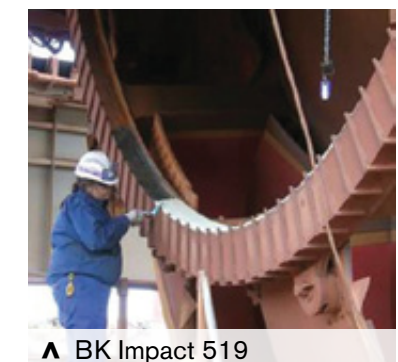
Products	Kit Size	Per Ctn	General Product Use
BK Wear105	3kg	4	Ceramic filled putty compound for application in voids >5mm and for medium impact & sliding abrasion. Ideal as grout between and under wear liners.
	7kg	2	
BK Brush305	0.8kg	1	Brush applied fine ceramic filled epoxy coating for applications 250 to 1500 micron in slurry applications.
BK Impact519	7kg	2	Impact resistant epoxy compound that has a fibre reinforcement to improve impact performance. Ideal for builds greater than 5mm such as fairing compound, corners of chutes and grout.
BK Fast605QS	3kg	4	Fast cure version of the BK Wear105, ideal as an emergency repair compound and for builds greater than 3mm such as chute corners and liner grout.
	10kg	1	
BK Bond705	1kg	1	Fine ceramic filled epoxy adhesive. Ideal for pump repair, ceramic tile applications or a grout between liners (3 5mm).Vertical build 0.5-3mm.
	7kg	2	
BK Prime901	120gm	1	Epoxy Primer for use where maximum adhesion is required for epoxy putties.



▲ BK Brush 305



▲ BK Wear 105



▲ BK Impact 519



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